SERVICE MANUAL PM333

marantz®

model PM333

Stereo Pre Main Amplifier

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:
Parts can be ordered either by mail or by telex. In both cases, MARANTZ part number has to be specified. If you order by mail, fulfil MARANTZ order forms.

MARANTZ S.A.
EUROPEAN PARTS DEPARTMENT
2, Avenue Léopold III
B-7120 PERONNES-lez-BINCHE
BELGIUM
TWX: 57589 SEPLT B

The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING:
Parts may be ordered from the following addresses:

EUROPE

MARANTZ S.A.
European Parts Department
2, Avenue Léopold III
B-7120 Péronnes-lez-Binche
Belgium
Telex: 57589

MARANTZ NORSKE A.S.
Refstadalleen 13
Oslo 5
Norway
Telex: 19659

MARANTZ DENMARK
Bregnerødvej 132b
3460 Birkerød
Denmark
Telex: 39137

MARANTZ GMBH AUSTRIA
Wiedner Hauptstrasse 98
1050 Wien
Austria
Telex: 113583

MARANTZ S.A.
326 Avenue Louise Bte 32
1050 Brussels
Belgium
Telex: 26602

MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

MARANTZ BELGIUM
45 Rue Auguste Van Zande
1080 Brussels
Belgium

MARANTZ SVENSKA A.B.
Svartviksvangen 56
Traneberg - Box 12016
16112 Bromma
Sweden
Telex: 13449

MARANTZ GERMANY GMBH
Max Planckstrasse, 22
6072 DREIEICH 1
West Germany
Telex: 4185316

MARANTZ AUDIO U.K. LTD.
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 OLW
Great Britain
Telex: 935196

AUSTRALIA

MARANTZ AUSTRALIA PTY., LTD.
32 Cross Street
Brookvale, N.S.W. 2100
Australia
Telex: 24121

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

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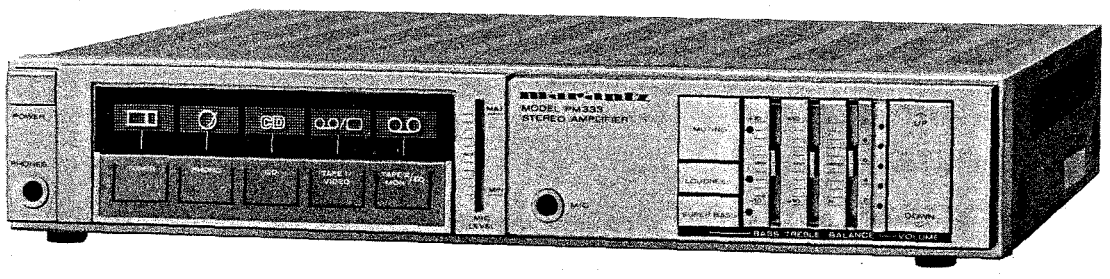
MODEL PM333 STEREO AMPLIFIER



INTRODUCTION

This service manual was prepared for use by Authorized Warranty Staions and contains service information for the Marantz Model PM333 Stereo Console Amplifier.

Servicing information and voltage data included in this manual are intended for use by knowledgeable and experienced personnel only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of circuitry operation.

The parts list furnishes complete ordering information. Most replacement parts should be ordered from the Marantz Company. However, a simple description is included for parts which can be obtained locally.

1. SHOCK, FIRE HAZARD SERVICE TEST

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verfied before return to user/customer.

Ref. UL Standard No. 1270. Para. 66. 3. D (Mandatory Test after servicing Electrical Appliances, effective 7-1-83).

2. FUNCTION SWITCH

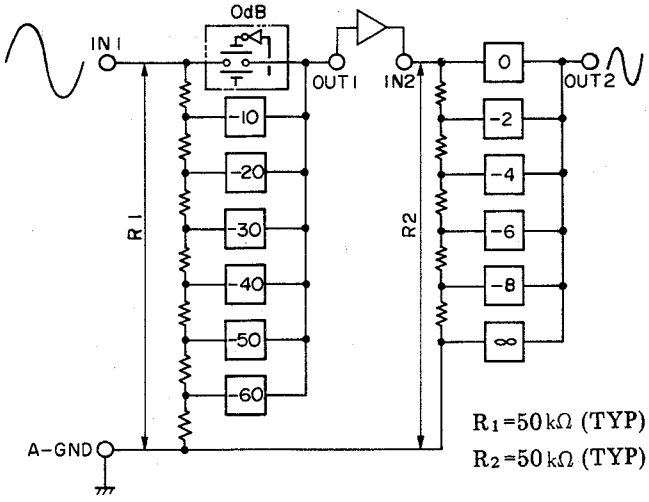
The function switch has 4-source, 1-tape monitor control and 2-channel functions. It employs LC7815H that resists a high voltage of 25V. In addition, high-voltage resistive LC4066BH is used for the TAPE OUT/MONITOR analog switch.
In the PM333, the last channel is not stored but the tuner is initialized when power is on (to sound with system power being on).
Signals AUX, TUNER and TAPE 1 are inputted to electronic switch QS01. Signal PHONO is amplified 35 dB by equalizer amplifier Q401, then corrected by R1AA and inputted to electronic switch QS01.
Signal TAPE 2 IN enters electronic switch QS02. It is sent to COMMON output under control of QS01. TAPE 1 OUT is controlled by QS03 to prevent sending of TAPE 1 OUT when the function switch is set to TAPE 1. All are reset by CW02 to initialize the tuner without back-up when power is on, and then initialized by CS03, DS01 and RS06 to turn on the tuner.

3. MICROCOMPUTER

The 4-bit microcomputer is used for easy remote control (QU03). Both QU01 and QU02 are easy remote switching transistors, and their signals are inputted to the input port of the microcomputer. Function signals are connected via DU01 to DU05 in parallel to the selector switch of function IC QS01. Volume UP/DOWN and LOUDNESS/MUTE send signals from each port of QU03 to volume control and MODE switch.

4. ELECTRIC VOLUME

The attenuator is based on the method to change over resistors connected in series with the analog switch. It is divided into an attenuator that attenuates a level from 0 to 60 dB in a 10-dB step and another that attenuates a level from 0 to −8 dB in a 2-dB step (totally, 0 to −66 dB in a 2-dB step). Attenuation can be incremented or decremented by starting the local oscillator.
Since the PM333 is not backed up for volume levels, it is automatically initialized to −40 dB when power is turned on.



QG04 and QG05 are switching transistors for remote control. An attenuation level is splitted into 13 steps in a range from 0 to ∞. A DC current of 50 μA flowing with a step is converted to DC voltage, which is applied to LED drive IC QG51 to split the level into 5 steps and display it.

5. PREAMPLIFIER

The first amplifier is for SUPER BASS and LOUDNESS control. Transistor impedance elements are inserted into the NF of the operational amplifier to give frequency response.

Super bass: 50 Hz + 10 dB
Loudness: 100 Hz + 6 dB

Signal from volume output terminal passes through QE01, where frequency response is given to it by impedance elements QE03/QE04 and QE05/QE06 and the signal enters the tone amplifier.
The Mic amplifier, amplifies the signal through QF01. One side of QF01 is used for a voltage follower to save circuit components. The amplified signal is splitted into the right and left channels and mixed with tone input at low impedance (only PA MIX).
The tone amplifier at the second stage consists of an operational amplifier (gain: 20 dB) to control bass and treble tones.
Audio muting signal is attenuated −20 dB at the output stage of the tone amplifier by an analog switch.
Another analog switch is used also to select SUPER BASS and LOUDNESS. Those can be selected by soft finger-tip motion.

6. MODE SWITCH CONTROLLER

Cyclic type FF IC TA9130P (QE51) is used for the SUPER BASS, LOUDNESS and MUTING switches to control the mode switch.
The TA9130P is an IC whose output is inverted to the high or low level with low-level input signal. It is controlled by each output through level shift transistors QE54 to QE56 to completely turn on/off analog switches and serves also for a display.
The LOUDNESS and MUTING switches are remotely controlled by the microcomputer for remote control. The controller is backed up by capacitor CE56 to hold a position (mode) of the mode switch for longer than one week after power off on 1000 μF, 16V.

7. POWER AMPLIFIER

The hybrid IC STK-3042-IIA is employed for the voltage amplifier, and the drive power amplifier at the post stage is a discrete transistor. The STK-3042-IIA is an improved version of the STK-3042-II for pop noise, and uses no muting relay for the PM333 to show its performance as specified.
The muting transistors 2SD1302 (Q701, Q702) having lo low V_{CE} saturation are used for amplifier input to mute pop noise that will be generated with the function switch changed over and the power switch turned on/off (gain: approx. 30 dB).

8. SPEAKER

The speaker is of one system only, and is switched to the head phone by the switch on it.

9. P.W. BOARDS

As can be seen from the circuit diagram the chassis of Model PM333 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. **Main Amp. . . . . mounted on P.W. Board P700**
2. **Tone Control Amp. . . . . mounted on P.W. Board PE00**
3. **Mic Jack . . . . . mounted on P.W. Board PF50**
4. **Electric Volume . . . . . mounted on P.W. Board PG00**
5. **Tone Volume/ Vol Up-Down Switch . . . mounted on P.W. Board PG50**
6. **Power Switch . . . . . mounted on P.W. Board PO00**
7. **Function Micon . . . . . mounted on P.W. Board PS00**
8. **RCA Pin Jack . . . . . mounted on P.W. Board PV00**
9. **Speaker Terminal . . . . . mounted on P.W. Board PW00**
10. **Headphone . . . . . mounted on P.W. Board PW50**
11. **Function Switch . . . . . mounted on P.W. Board PY00**

10. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model PM333 Stereo Pre Main Amplifier.

Item	Use
Distortion Analyzer	Distortion measurements
Audio Oscillator	Sinewave and squarewave signal source
AC VTVM	Voltage measurements (AC)
Oscilloscope	Waveform analysis and trouble shooting and ASO alignment
Circuit Tester	Trouble shooting
DC VTVM	Voltage measurements (DC)
AC Wattmeter	Monitors primary power to amplifier
Line Voltmeter	Monitors potential of primary power to amplifier
Variable Autotransformer (0 ~ 140V AC, 10A)	Adjust level of primery power to amplifier
Shorting Plug	Shorts amplifier input to eliminate noise pickup

11. ADJUSTING PROCEDURES

1. Volume indicator level adjustment (VL. IND. LEVEL ADJ.)

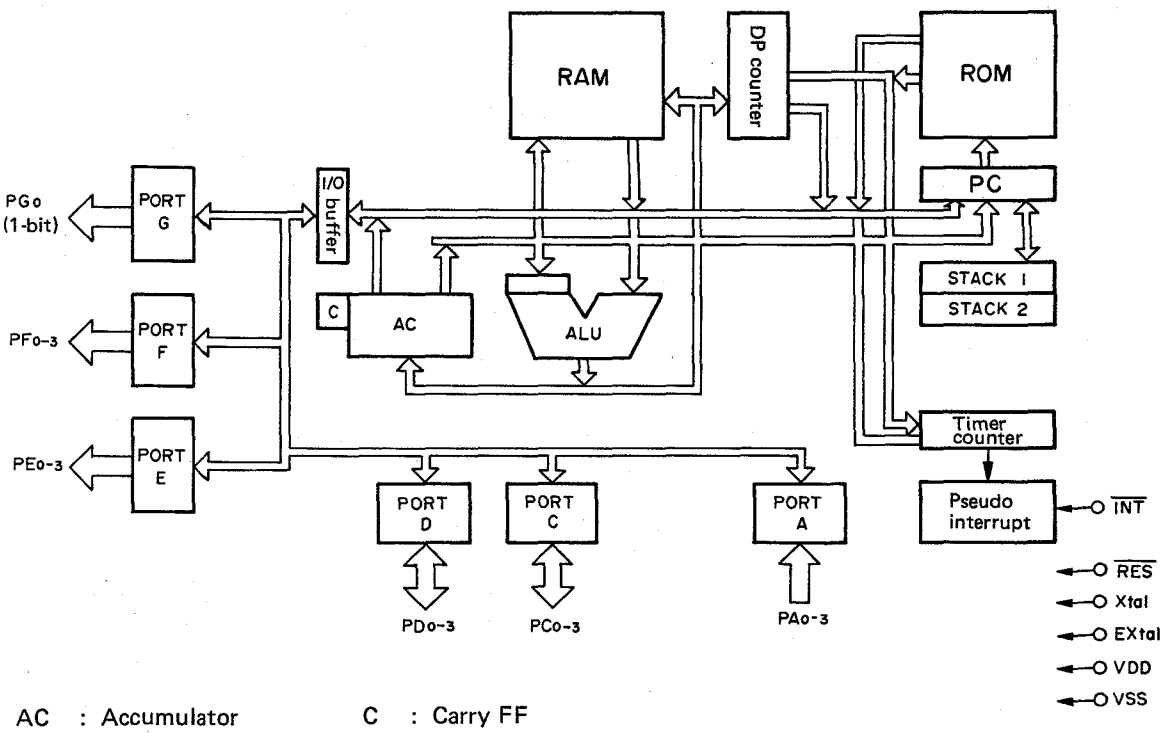
(1) Apply the input of 1 kHz 100 mV to "TUNER INPUT" of the set. The outpit of the speaker is to be of no load.
(2) Keep pressing the "UP" button of the "VOLUME UP/DOWN SWITCH" until the speaker output maximizes and the rise in the level comes to a stop.
(3) Keep pressing the "DOWN" button of the "VOLUME UP/DOWN SWITCH" until the speaker output goes down by 2 steps (about –4 dB).
(4) Turn RG14 (5 kΩ) in such a way that the five points of the volume indicator (green LEDs) will light up.
(5) After turning the "POWER SWITCH" off, turn it on again, and confirm that two points of the LEDs will light in the initial state.
Also, confirm that five points of the LEDs will light at "VOLUME MAX."

2. Idling adjustment (IDLING ADJ.)

(1) Providing input to and receiving output from the set is to be effected in the "OPEN" state.
(2) For the left channel, connect the digital voltmeter to both TP–1 and R727 (A) and for the right channel, to both TP–2 and R728 (B). (Refer to the diagram of the printed circuit board.)
(3) After switching "POWER" on, turn R711 (L. ch) and R712 (R. ch), and adjust so that DC voltage will register 6.0 mV on the digital voltmeter. (Idling current, about 20 mA).

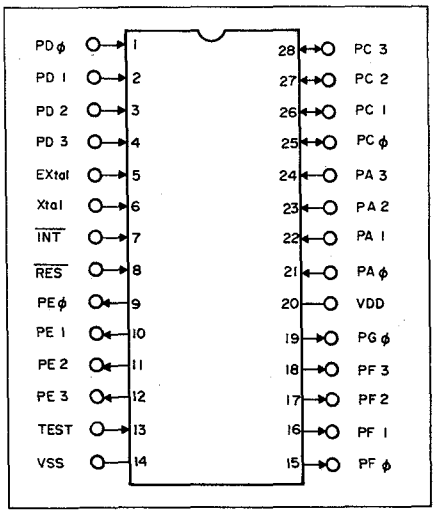
12. SINGLE-CHIP 4-BIT MICROCOMPUTER FOR LM6416E (QU03) N-CHANNEL E/D MOS LSI

- **System Block Diagram** (LM6416E (QU03))



AC : Accumulator
ALU : Logic operation unit
DP : Data pointer
C : Carry FF
PC : Program counter

- **Package and Terminal Name**



(Terminal Name)

Xtal, EXtal : Resonator for oscillator
$\overline{INT}$: Interrupt
$\overline{RES}$: Reset
$PA_{0\text{-}3}$: Input port $A_{0\text{-}3}$
$PC_{0\text{-}3}$: I/O port $C_{0\text{-}3}$
$PD_{0\text{-}3}$: I/O port $D_{0\text{-}3}$
$PE_{0\text{-}3}$: Output port $E_{0\text{-}3}$
$PF_{0\text{-}3}$: Output port $F_{0\text{-}3}$
PG_0 : Output port G_0
TEST : Test

• Terminal Function (LM6416E (QU03))

Terminal Name	I/O	Function
$\overline{INT}$	Input	Pseudo interrupt request input terminal.
$\overline{RES}$	Input	Reset input terminal.
PA_{3-0}	Input	Input ports A_3 to A_0 In input mode, 4-bit input and bit test are allowed.
PC_{3-0}	I/O	I/O ports C_3 to C_0 In input mode, 4-bit input and bit test are allowed. In output mode, 4-bit output, bit set/reset and immediate data output are allowed.
PD_{3-0}	I/O	I/O ports D_3 to D_0 In input mode, 4-bit input and bit test are allowed. In output mode, 4-bit output, bit set/reset and immediate data output are allowed.
PE_{3-0}	Output	Output ports E_3 to E_0 4-bit output and bit set/reset are allowed.
PF_{3-0}	Output	Output ports F_3 to F_0 4-bit output and bit set/reset are allowed.
PG_0	Output	Output port G_0 In output mode, 1-bit output and bit set/reset are allowed.
X'tal	I/O	External terminal of the resonance circuit for local clock signal oscillation. A ceramic resonator and CR are connected to the space between this terminal and Ex'tal terminal.
Ex'tal	Input	Terminal operated with clock signal externally supplied. A ceramic resonator and CR are connected to the space between the X'tal and this terminals when using the local clock signal oscillator.
V_{DD}	Input	Power terminal, usually connected to +5V.
V_{SS}		Connected to 0V of power supply.
TEST	Input	LSI test terminal, usually connected to V_{SS} (0V).

• Maximum Ratings (Ta = 25°C, V_{SS} = 0V)

Item	Symbol	Condition	Min.	Max.	Unit
Maximum supply voltage	V_{DD} max.		−0.3	+8	V
Input voltage	V_{IN}		−0.3	+12 (15)	V
Output voltage	V_{OUT}	Output transistor OFF	−0.3	+12 (15)	V
Mean output current	I_{OLA} (1)	Per terminal of port	0	20	mA
(Average at interval of 100 ms)	I_{OLA} (2)	Sum of C and D ports	0	100	mA
	I_{OLA} (3)	Sum of E, F and G ports	0	110	mA
Peak output current	I_{OLA} (1)	Per terminal of port	0	20	mA
	I_{OLA} (2)	Sum of C and D port	0	120	mA
	I_{OLA} (3)	Sum of E, F and G port	0	130	mA
Allowable power dissipation	Pd max.	−30°C to +70°C			mW
Ambient operating temperature	Topg		−30	+70	°C
Ambient storage temperature	Tstg		−55	+125	°C

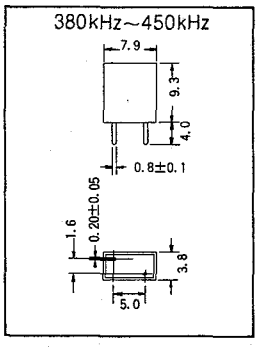
- **Operating Condition** (Ta = −30 ~ +70°C, V_{SS} = 0V)

Item		Symbol	Min.	Max.	Unit
Recommended operating supply voltage		V_{DD}	4.5	6.5	V
Port input	High-level input voltage	V_{IH} (1)	0.6 V_{DD}	10	V
	Low-level input voltage	V_{IL} (1)	V_{SS}	0.3 V_{DD}	V
$\overline{INT}$, $\overline{RES}$	High-level input voltage	V_{IH} (2)	0.7 V_{DD}	10	V
	Low-level input voltage	V_{IL} (2)	V_{SS}	0.3 V_{DD}	V
EX'tal	High-level input voltage	V_{IH} (3)	0.7 V_{DD}	V_{DD}	V
	Low-level input voltage	V_{IL} (3)	V_{SS}	0.6	V
	Clock signal period	tc (ϕ)	1.0	10.0	μs
	High-level clock pulse width	twϕH	0.3		μs
	Low-level clock pulse width	twϕL	0.5		μs
Oscillator circuit	Resistor installed outside ceramic oscillator	R1	900	1100	kΩ
	Capacitor installed outside ceramic oscillator	C1			pF
	Capacitor installed outside ceramic oscillator	C2			pF
	Resistor installed outside CR oscillator	R2			pF
	Capacitor installed outside CR oscillator	C3			kΩ
TEST	Low-level input voltage	V_{IL} (4)	V_{SS}	0.4	V

- **Electrical Characteristics** (Ta = −30 ~ +70°C, V_{DD} = 4.5 ~ 6.5V, V_{SS} = 0V)

Item		Symbol	Min.	Max.	Unit
Port A	High-level input current	I_{IH} (1)		10	μA
$\overline{INT}$, $\overline{RES}$	Low-level input current	I_{IL} (1)	−10		μA
EX'tal	High-level input current	I_{IH} (2)		10	μA
	Low-level input current	I_{IL} (2)	−10		μA
Port C, D (in output Off)	High-level input current	I_{IH} (3)		10	μA
	Low-level input current	I_{IL} (3)	−10		μA
Ports C to G	Low-level output current	I_{OL} (1)	10		mA
	Output off leak current	I_{OFF} (1)		10	μA
CR oscillation frequency		f_{OSC}	500	1000	kHz
Power dissipation		I_{DD}		20	mA
Input terminal capacitance		C_I		10	pF

- **Ceramic Resonator**



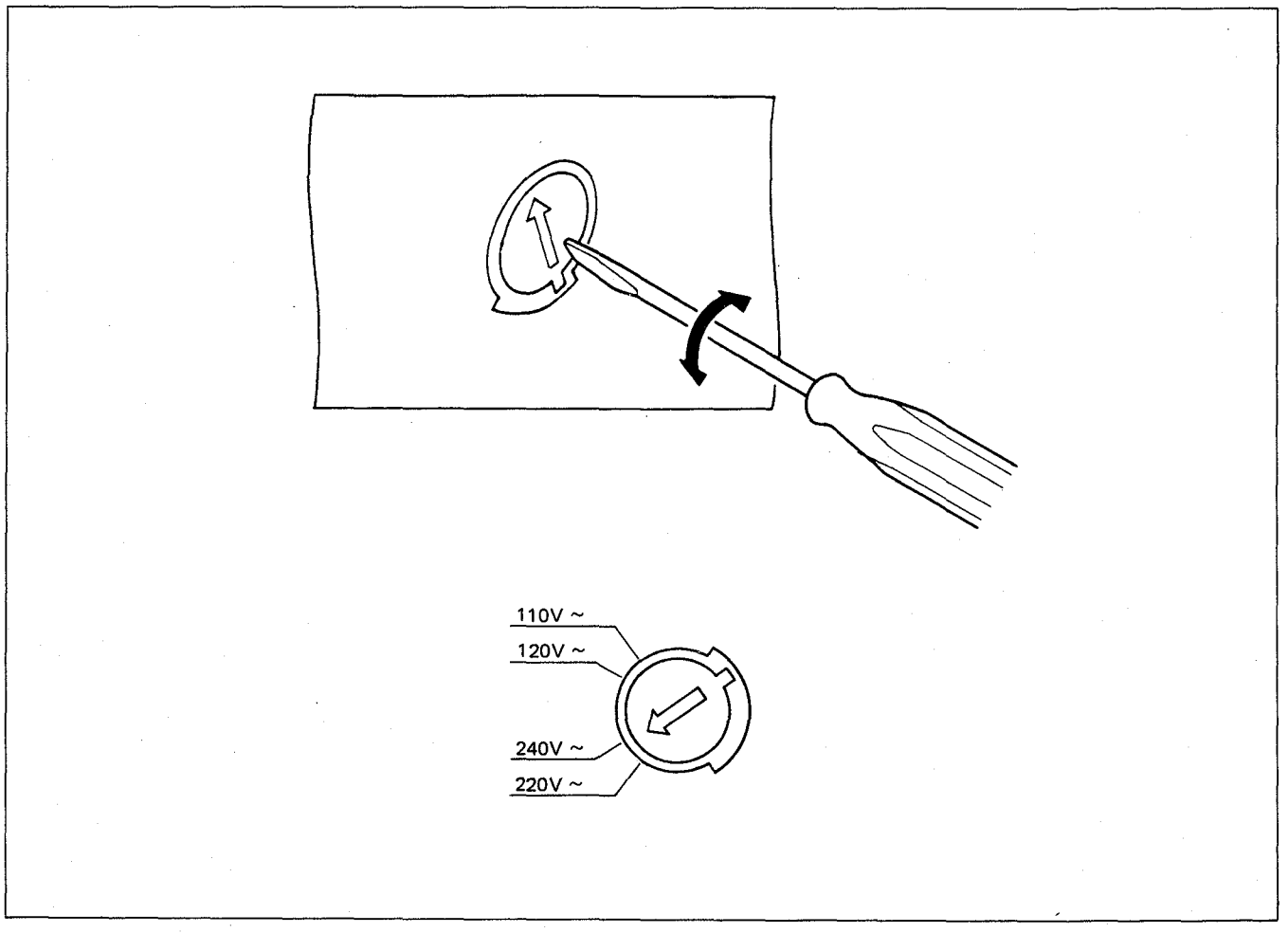
13. VOLTAGE CONVERSION

- **EUROPEAN MODEL ONLY**

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

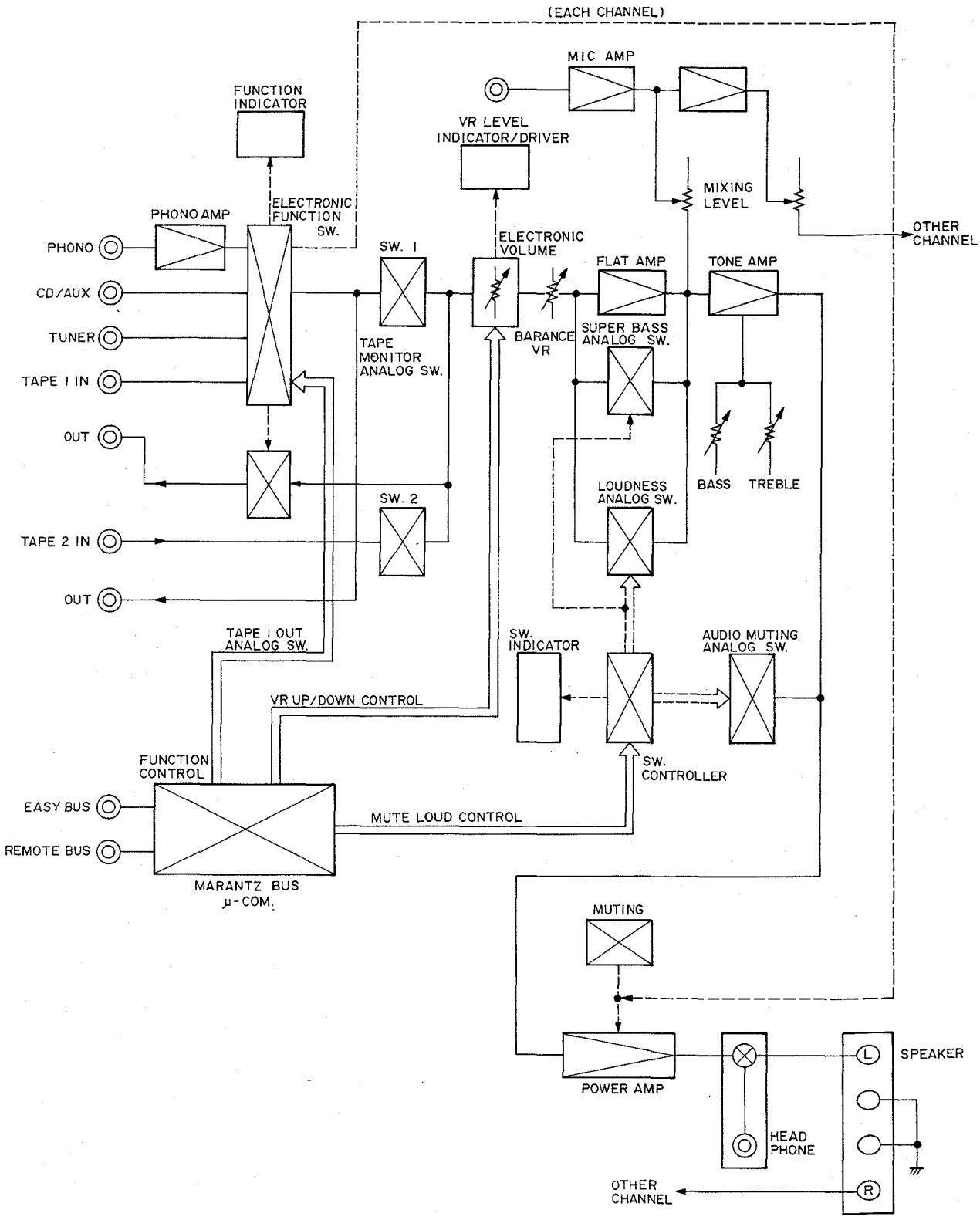
CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

Voltage Conversion Chart



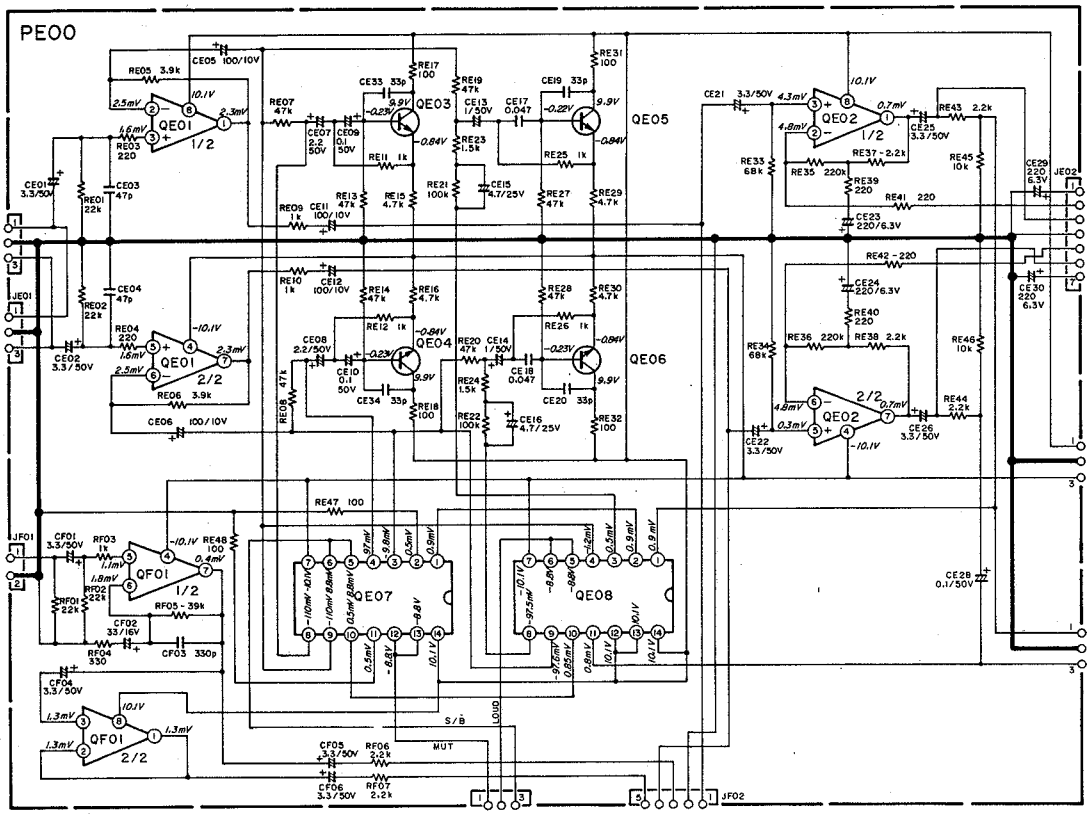
Note on safety: Symbol ⚠ Fire or electrical shock hazard. Only orignal parts should be used to replace any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

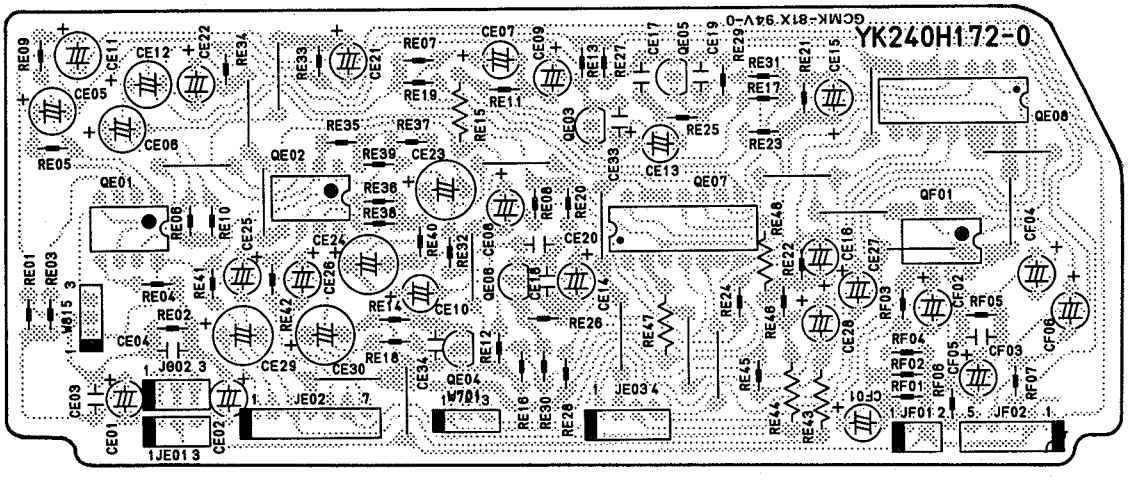
14. BLOCK DIAGRAM



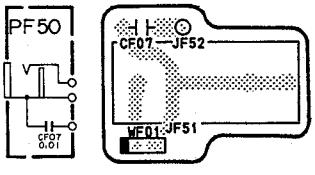
15. DIAGRAM AND COMPONENT LOCATIONS

15.1 Tone Control Amp. Assembly (PE00) Schematic Diagram and Component Locations

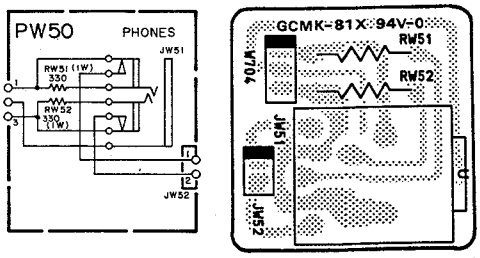




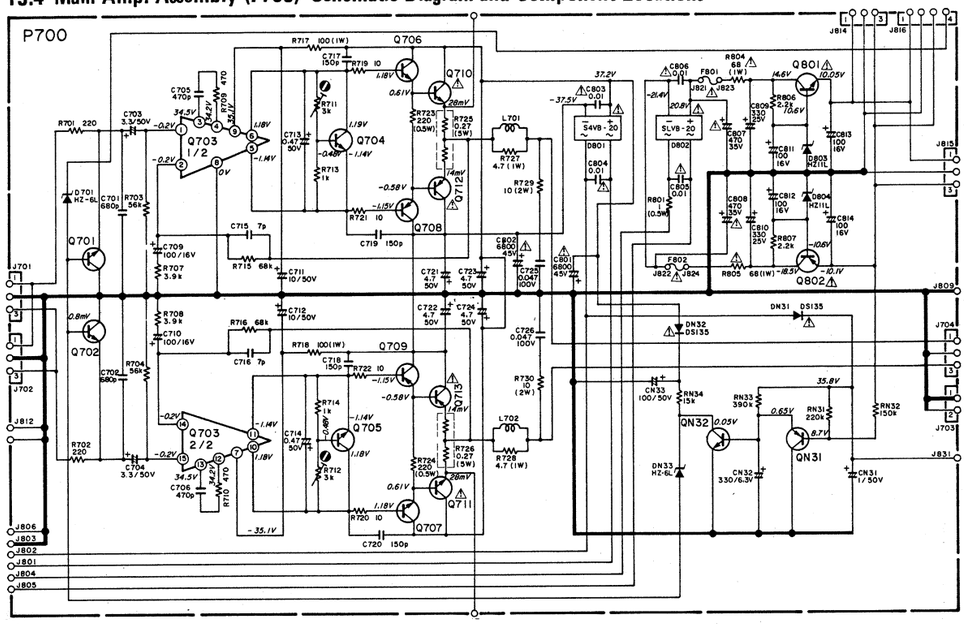
15.2 Mic Jack Assembly (PF50) Schematic Diagram and Component Locations

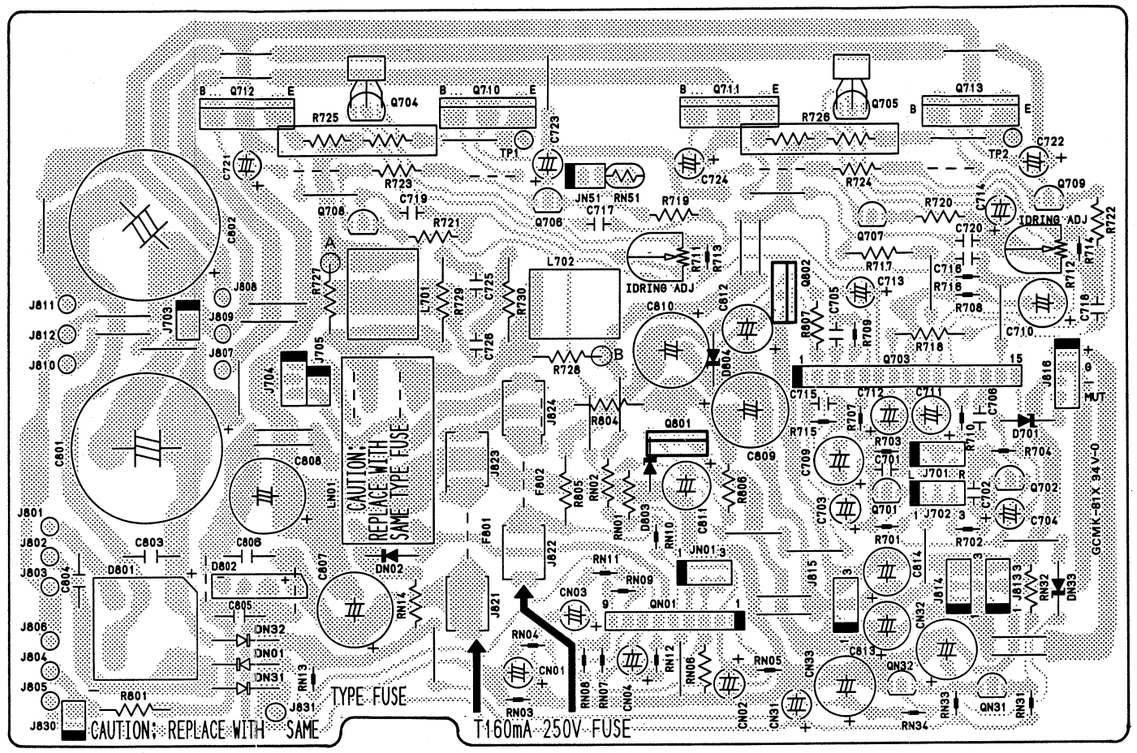


15.3 Headphone Assembly (PW50) Schematic Diagram and Component Locations

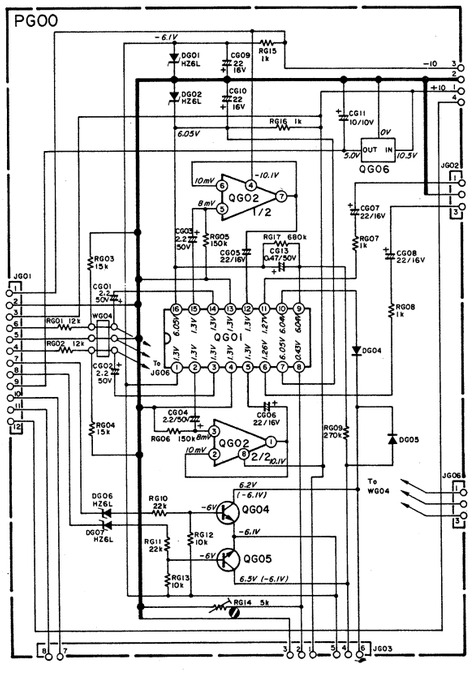


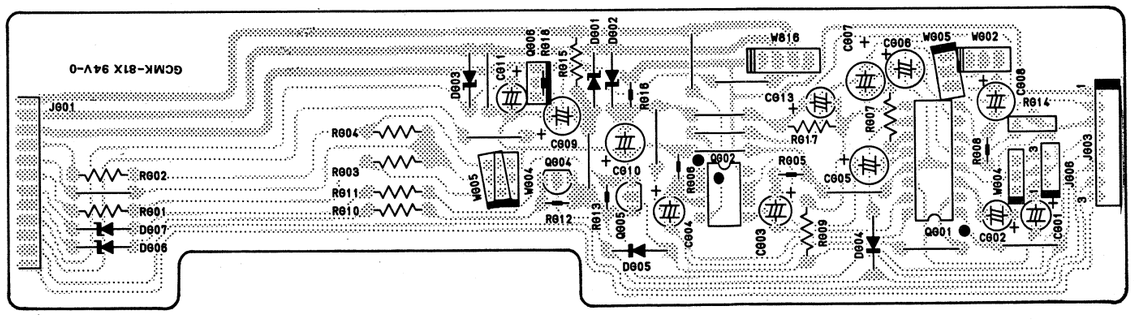
15.4 Main Amp. Assembly (P700) Schematic Diagram and Component Locations



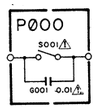


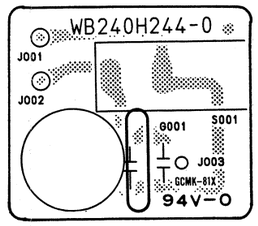
15.5 Electric Volume Assembly (PG00) Schematic Diagram and Component Locations



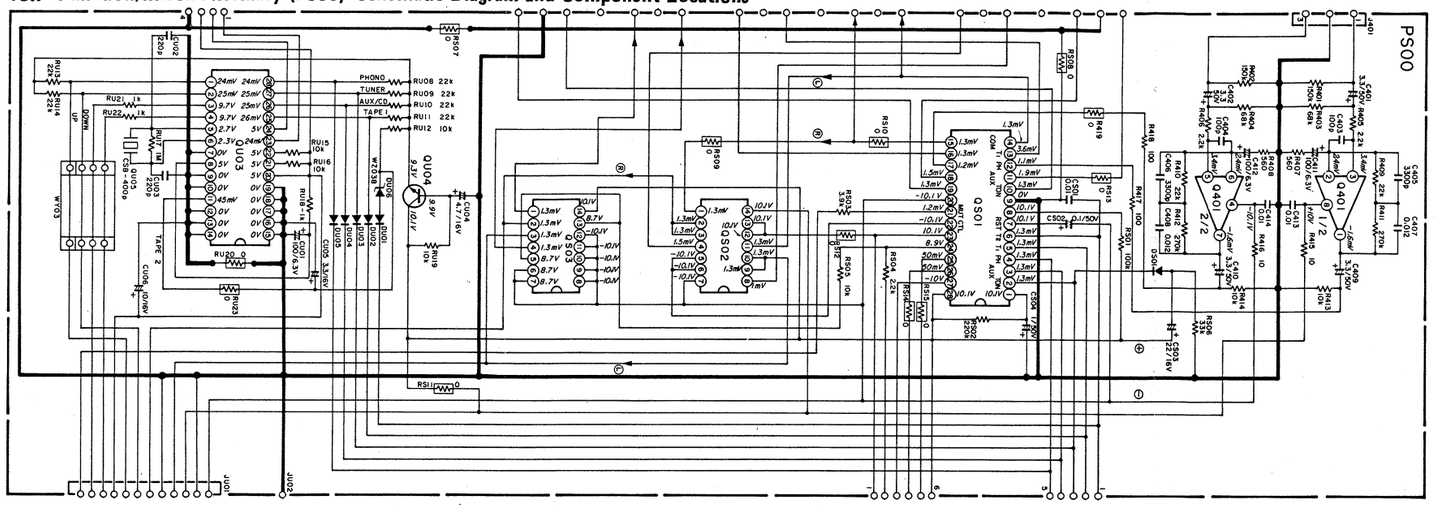


15.6 Power Switch Assembly (PO00) Schematic Diagram and Component Locations

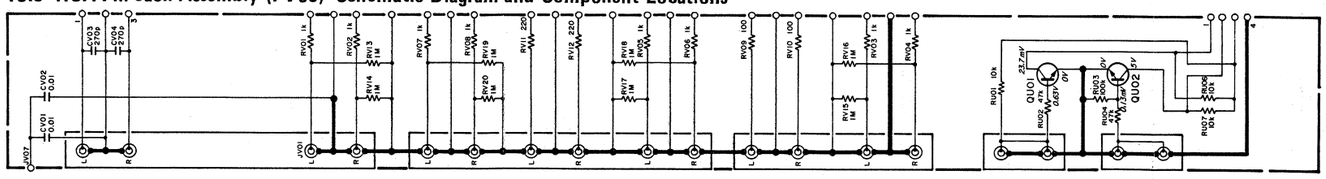


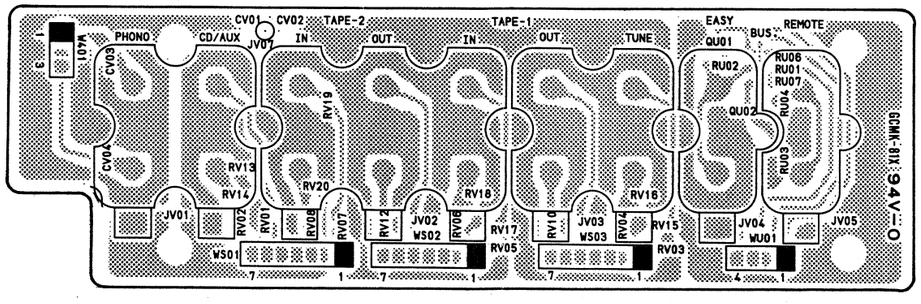


15.7 Function/Micon Assembly (PS00) Schematic Diagram and Component Locations

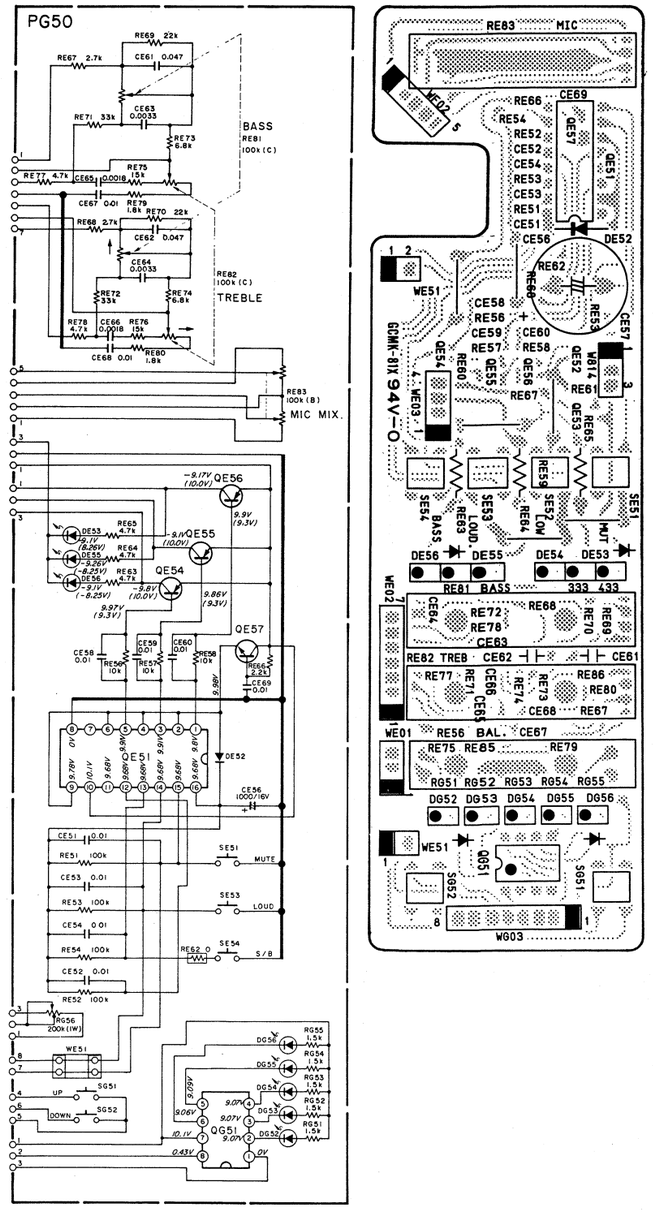


15.8 RCA Pin Jack Assembly (PV00) Schematic Diagram and Component Locations

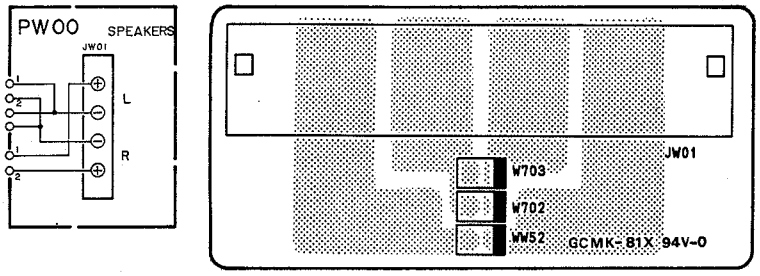




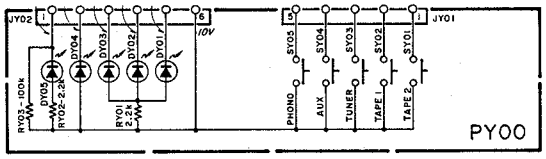
15.9 Tone, Main Volume LED Assembly (PG50) Schematic Diagram and Component Locations

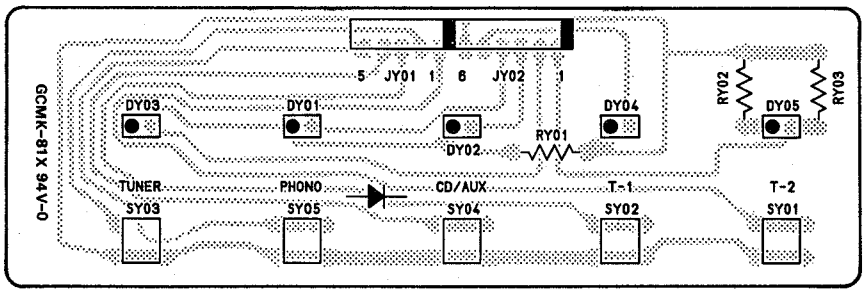


15.10 Speaker Terminal Assembly (PW00) Schematic Diagram and Component Locations



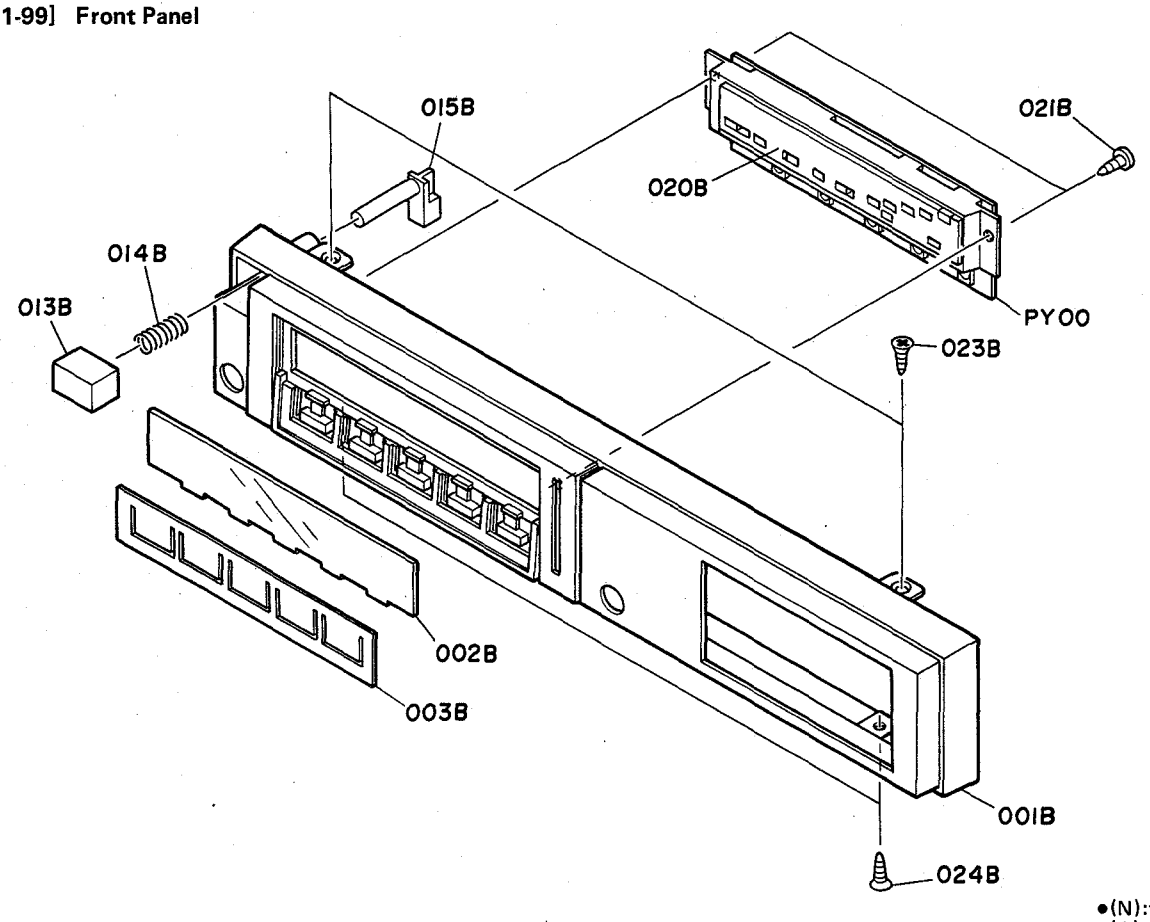
15.11 Function Switch Assembly (PY00) Schematic Diagram and Component Locations





16. EXPLODED VIEW AND PARTS LIST

- [C01-99] Front Panel

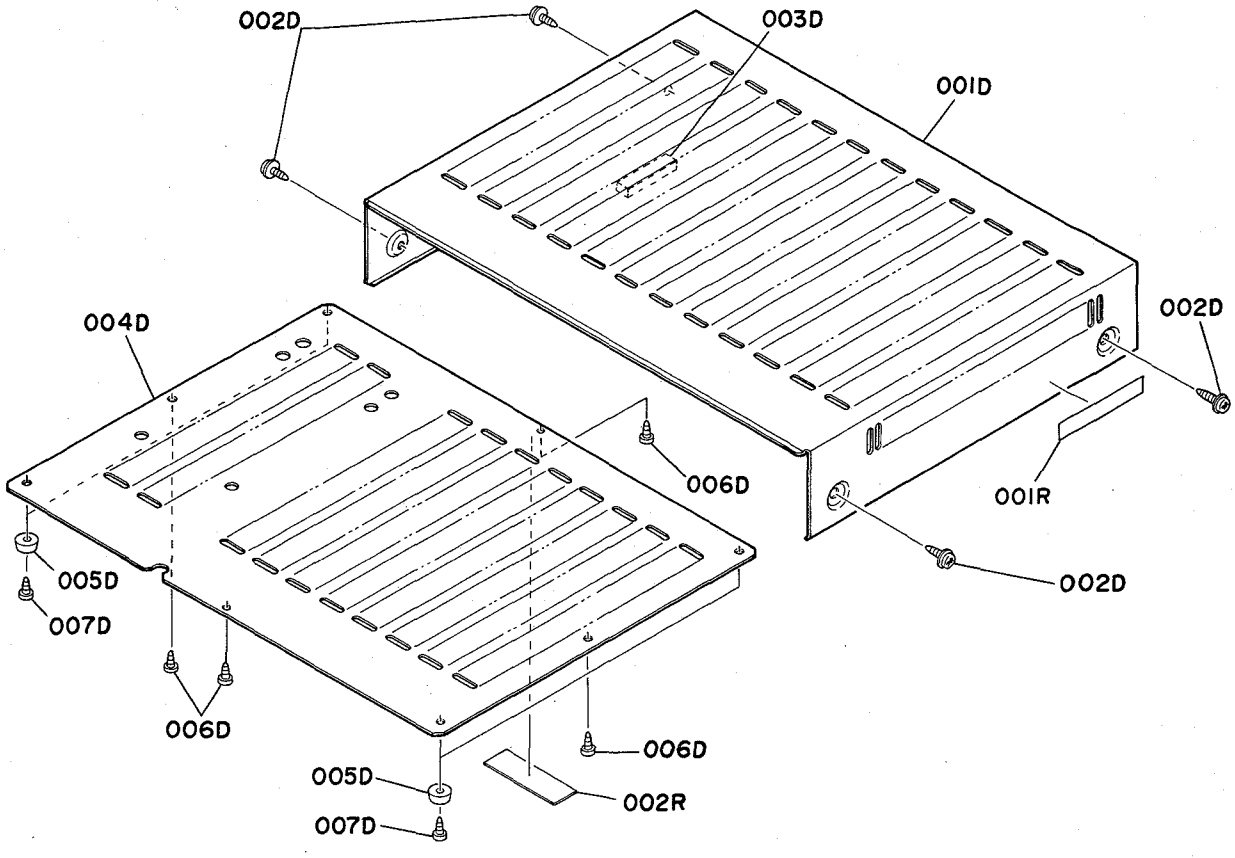


- (N):for Europe
- (A):for Australia
- (F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
A	1	1	1	240H063400	Front Panel Assembly, Gold
A1			1	240H063410	Front Panel Assembly, Bronze
001B	1	1	1	240H063010	Escutcheon, Front Panel; (G)
001B			1	240H063110	Escutcheon, Front Panel; (B)
002B	1	1	1	240H158010	Window
003B	1	1	1	240H127010	Control Board
013B	1	1	1	139T154350	Knob, Power Switch, Gold
013B			1	139T154250	Knob, Power Switch, Bronze
014B	1	1	1	139T115020	Spring
015B	1	1	1	012H121010	Link

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
020B	1	1	1	240H118010	Spacer
021B	2	2	2	51282606B0	B.H. Tapped Screw B2.6 x 6
023B	2	2	2	51500306B0	F.H. Tapped Screw F3 x 6
024B	2	2	2	51500306B0	F.H. Tapped Screw F3 x 6

● [C02-99] Lid (Top/Botton)

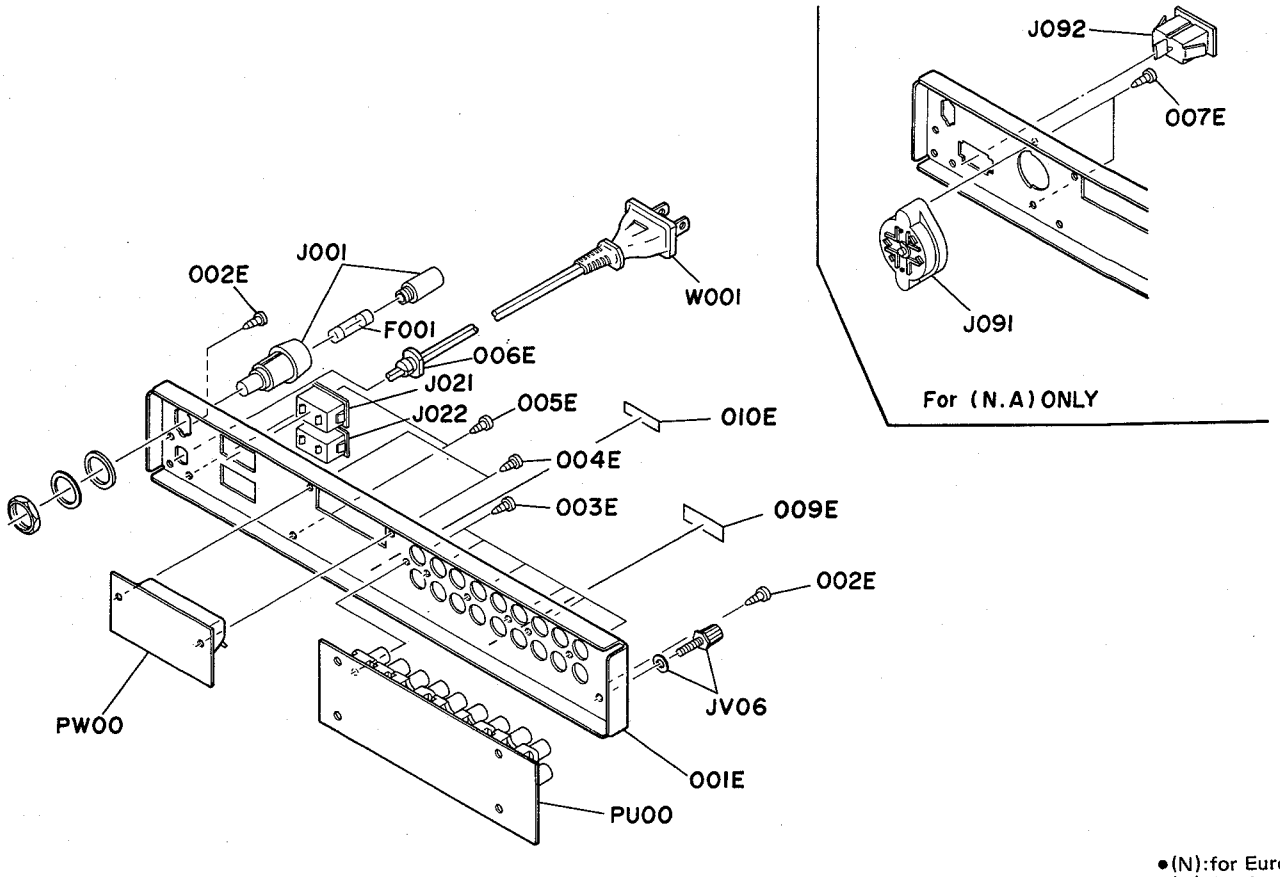


●(N):for Europe
●(A):for Australia
●(F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
001D	1	1	1	240H257010	Lid, Top Cover: Gold
001D			1	240H257110	Lid, Top Cover; Bronze
002D	2	2	2	51260306U0	B.T. Screw B3 x 6
003D	1	1	1	240H056010	Buffer
004D	1	1	1	240H257020	Lid, Bottom Cover
005D	4	4	4	240H057010	Leg
006D	4	4	4	51280306B0	B.H. Tapped Screw B3 x 6
007D	4	4	4	51280306B0	B.H. Tapped Screw B3 x 6

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
001R	1	1		2932861140	Label
002R	1	1		2911861110	Label

● [C03-99] Rear Panel

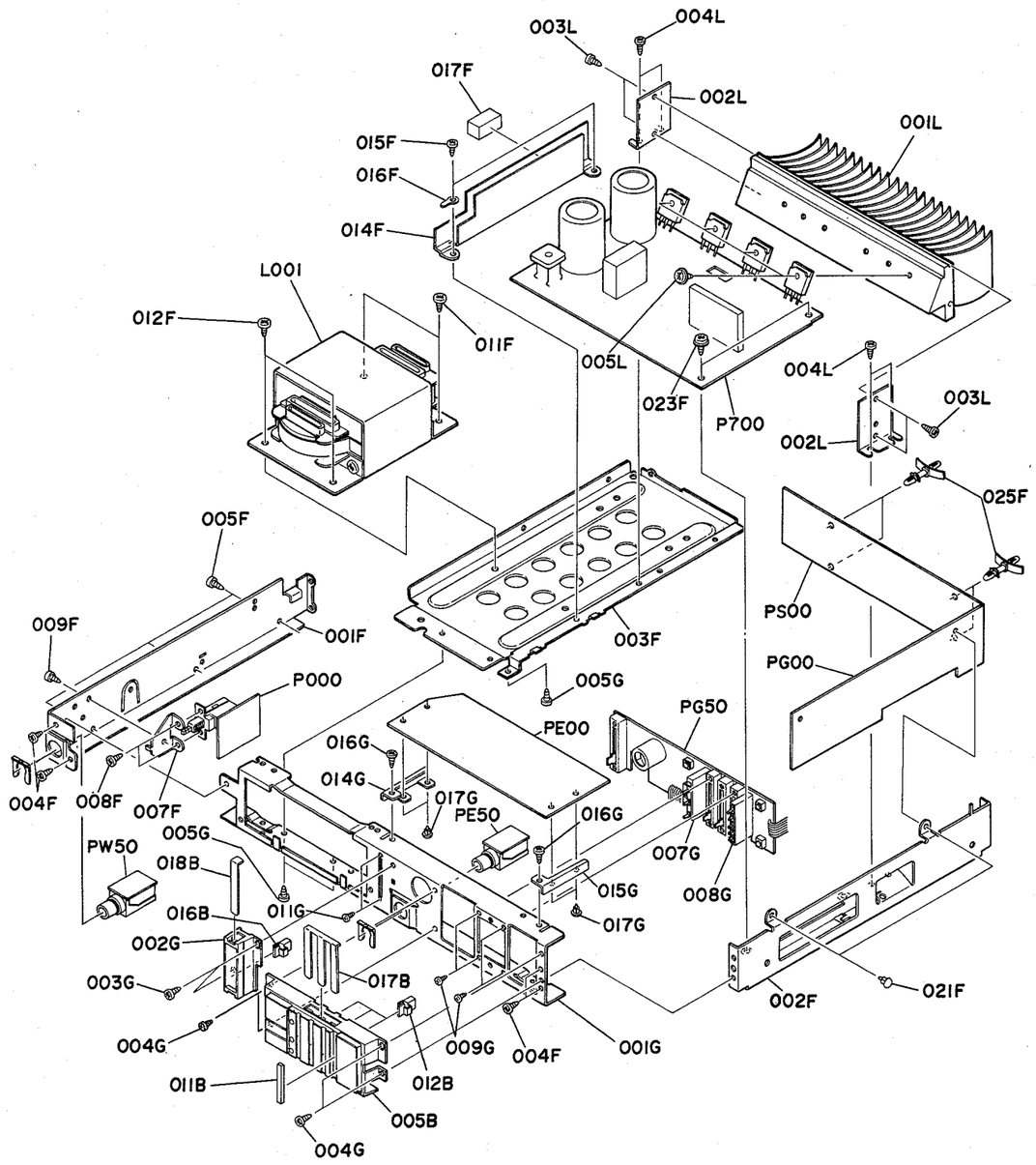


●(N):for Europe
●(A):for Australia
●(F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
001E	1	1		240H160220	Bracket, Rear Panel
001E			1	240H160210	Bracket, Rear Panel
002E	2	2	2	51280306B0	B.H. Tapped Screw B3 x 6
003E	6	6	6	51280308B0	B.H. Tapped Screw B3 x 8
004E	2	2	2	51280308B0	B.H. Tapped Screw B3 x 8
005E	2	2	2	51280306B0	B.H. Tapped Screw B3 x 6
006E			1	1455259030	Bushing, AC Cord
007E	2	2		51280308B0	B.H. Tapped Screw B3 x 8
009E	1	1	1	2112265010	Indicator
010E	1	1		4581861010	Label, Made in Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
⚠F001	1	1		FS10125800	Fuse T1.25A
⚠F001			1	FS10300600	Fuse 3A 250V
⚠J001	1	1		YJ08000290	Jack, Fuse Holder
⚠J001			1	YJ08000300	Jack, Fuse Holder
⚠J021			1	YJ04000990	Jack, AC Outlet
⚠J022			1	YJ04000990	Jack, AC Outlet
⚠J091	1	1		BY05080050	Voltage Selector
⚠J092	1	2		YP04000580	Plug, AC Inlet
JV06	1	1	1	YL03010250	Terminal (GND)
⚠W001			1	YC01800190	A.C. Power Cord

● [P01-99] Chassis and General Parts

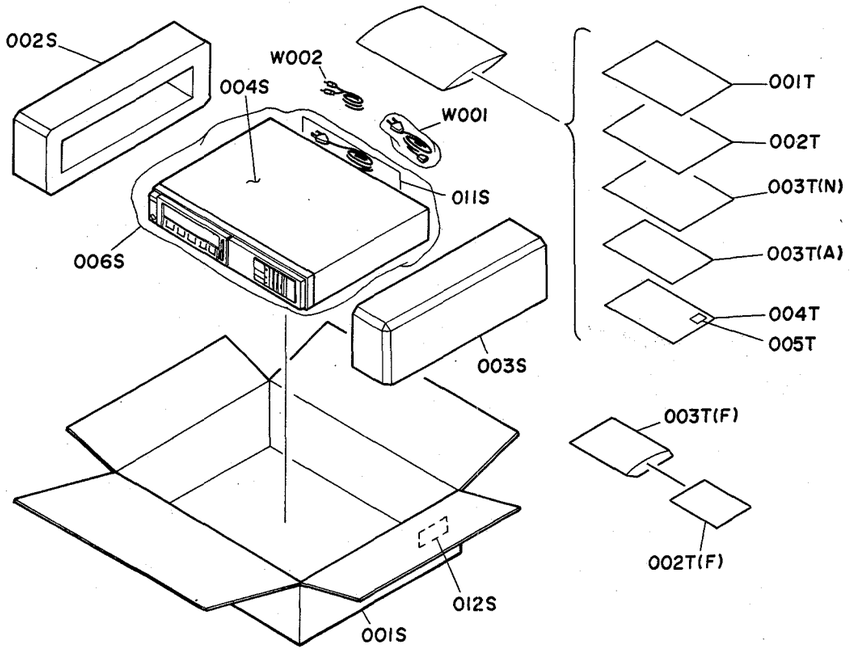


●(N):for Europe
●(A):for Australia
●(F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
005B	1	1	1	240H259500	Bushing, Gold
005B			1	240H259510	Bushing, Bronze
011B	1	1	1	240H158020	Window, Volume
012B	3	3	3	240H154050	Knob, Gold
012B			3	012H154160	Knob, Bronze
016B	1	1	1	012H154160	Knob, Mic
017B	1	1	1	012H303020	Mask, Gold
017B			1	240H303110	Mask, Bronze
018B	1	1	1	240H303020	Mask, Gold
018B			1	240H303130	Mask, Bronze
001F	1	1	1	240H126010	Stay, Left
002F	1	1	1	240H126020	Stay, Right
003F	1	1	1	240H004010	Table, Transformer
004F	4	4	4	51280306B0	B.H. Tapped Screw B3 x 6
005F	3	3	3	51280306B0	B.H. Tapped Screw B3 x 6
007F	1	1	1	240H160040	Bracket, Power Switch
008F	2	2	2	51100306A9	B.H.M. Screw B3 x 6
009F	1	1	1	51280306B0	B.H. Tapped Screw B3 x 6
011F	2	2	2	51280406B0	B.H. Tapped Screw B4 x 6
012F	2	2	2	51280406B0	B.H. Tapped Screw B4 x 6
014F	1	1	1	240H109010	Shield
015F	2	2	2	51280306B0	B.H. Tapped Screw
016F	1	1	1	62030049W0	Lug
017F	1	1	1	2114056010	Buffer
021F	2	2	2	2276005050	Clamper
023F	2	2	2	51260306U0	B.T. Screw B3 x 6
025F	4	4	4	240H101010	Support
001G	1	1	1	240H160010	Bracket, Chassis
002G	1	1	1	240H259020	Bushing, Mic; Gold
002G			1	240H259120	Bushing, Mic; Bronze
003G	2	2	2	51282606B0	B.H. Tapped Screw B2.6 x 6
004G	4	4	4	51282606B0	B.H. Tapped Screw B2.6 x 6
005G	3	3	3	51280306B0	B.H. Tapped Screw B3 x 6
007G	1	1	1	240H118020	Spacer, Mode
008G	1	1	1	240H118030	Spacer, Volume
009G	4	4	4	51100203A0	B.H.M. Screw B2 x 3
011G	2	2	2	51100204A0	B.H.M. Screw B2 x 4
014G	1	1	1	240H160020	Bracket
015G	1	1	1	240H160030	Brakcet
016G	2	2	2	51500306B0	B.H. Tapped Screw B3 x 6
017G	4	4	4	2276005050	Clamper

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
001L	1	1	1	240H267010	Heatsink
002L	2	2	2	2133160030	Bracket
003L	4	4	4	51280306B0	B.H. Tapped Screw B3 x 6
004L	4	4	4	51280306B0	B.H. Tapped Screw B3 x 6
005L	4	4	4	51260310B0	B.T. Screw B3 x 10
⚠L001	1	1		TS17801030	Power Transformer
⚠L001			1	TS17801010	Power Transformer

● [H01-99] Packing Materials



●(N):for Europe
●(A):for Australia
●(F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
001S	1	1	1	240H801020	Packing Case
002S	1	1	1	240H809110	Cushion, (L)
003S	1	1	1	240H809020	Cushion, (R)
004S	1	1	1	240H809030	Cushion
006S	1	1	1	9013540010	Polyethylene Bag
011S			1	2918107390	Sheet
012S	4			9526019060	Serial No. Card
012S		4		9526019030	Serial No. Card
012S			4	9526019040	Serial No. Card
001T	1	1		240H851310	Instructions
001T			1	240H851110	Instructions
002T	1	1		240H851320	Instructions, Spec
002T			1	9631000130	Guarantee Card
003T	1			240H856010	Circuit Diagram
003T		1		9631000090	Guarantee Card
003T			1	128T854010	Guarantee Card (Envelope)

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
004T			1	9611000050	User's Card
005T			1	9540000010	License
⚠W001	1			ZC01805010	A.C. Power Cord
⚠W001		1		ZC02006020	A.C. Power Cord
W002	1	1	1	ZD00400090	Connective Cord

17. ELECTRICAL PARTS LIST

●(N):for Europe
●(A):for Australia
●(F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					P700-MAIN AMP CIRCUIT BOARD
P700	1	1	1	YK240H1710	P.W. Board, Main Amp.
	1	1		ZZ240H1710	P.W. Board Assembly
					P700-CAPACITORS
CN31	1	1	1	EA10505030	Elect 1μF 50V
CN32	1	1	1	EA33700630	Elect 330μF 6.3V
CN33	1	1	1	EA10705030	Elect 100μF 50V
C701	1	1	1	DK16681300	Ceramic 680μF ±10%
C702	1	1	1	DK16681300	Ceramic 680μF ±10%
C703	1	1	1	EA33505030	Elect 3.3μF 50V
C704	1	1	1	EA33505030	Elect 3.3μF 50V
C705	1	1	1	DD15471370	Ceramic 470pF ±5%
C706	1	1	1	DD15471370	Ceramic 470pF ±5%
C709	1	1	1	EA10701630	Elect 100μF 16V
C710	1	1	1	EA10701630	Elect 100μF 16V
C711	1	1	1	EA10605030	Elect 10μF 50V
C712	1	1	1	EA10605030	Elect 10μF 50V
C713	1	1	1	EA47405030	Elect 0.47μF 50V
C714	1	1	1	EA47405030	Elect 0.47μF 50V
C715	1	1	1	DD11070370	Ceramic 7pF ±0.5pF
C716	1	1	1	DD11070370	Ceramic 7pF ±0.5pF
C717	1	1	1	DK16151550	Ceramic 150pF ±10%
C718	1	1	1	DK16151550	Ceramic 150pF ±10%
C719	1	1	1	DK16151550	Ceramic 150pF ±10%
C720	1	1	1	DK16151550	Ceramic 150pF ±10%
C721	1	1	1	EA47505030	Elect 4.7μF 50V
C722	1	1	1	EA47505030	Elect 4.7μF 50V
C723	1	1	1	EA47505030	Elect 4.7μF 50V
C724	1	1	1	EA47505030	Elect 4.7μF 50V
C725	1	1	1	DF16473540	Film 0.047μF ±10%
C726	1	1	1	DF16473540	Film 0.047μF ±10%
⚠C801	1	1	1	EB68804570	Elect 6800μF 45V
⚠C802	1	1	1	EB68804570	Elect 6800μF 45V
⚠C803	1	1	1	DK18103560	Ceramic 0.01μF
⚠C804	1	1	1	DK18103560	Ceramic 0.01μF
⚠C805	1	1	1	DK18103560	Ceramic 0.01μF
⚠C806	1	1	1	DK18103560	Ceramic 0.01μF
⚠C807	1	1	1	EA47703530	Elect 470μF 35V
⚠C808	1	1	1	EA47703530	Elect 470μF 35V
C809	1	1	1	EA33702530	Elect 330μF 25V
C810	1	1	1	EA33702530	Elect 330μF 25V
C811	1	1	1	EA10701630	Elect 100μF 16V
C812	1	1	1	EA10701630	Elect 100μF 16V
C813	1	1	1	EA10701630	Elect 100μF 16V
C814	1	1	1	EA10701630	Elect 100μF 16V
					P700-RESISTORS (All Resistors are ±5% & ¼W)
RN31	1	1	1	GD05224140	220KΩ
RN32	1	1	1	GD05154140	150KΩ
RN33	1	1	1	GD05394140	390KΩ
RN34	1	1	1	GD05153140	15KΩ

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
R701	1	1	1	GD05221140	220Ω
R702	1	1	1	GD05221140	220Ω
R703	1	1	1	GD05563140	56KΩ
R704	1	1	1	GD05563140	56KΩ
R707	1	1	1	GD05392140	3.9KΩ
R708	1	1	1	GD05392140	3.9KΩ
R709	1	1	1	GD05471140	470Ω
R710	1	1	1	GD05471140	470Ω
R711	1	1	1	RA03020800	3KΩ, Trimming
R712	1	1	1	RA03020800	3KΩ, Trimming
R713	1	1	1	GD05102140	1KΩ
R714	1	1	1	GD05102140	1KΩ
R715	1	1	1	GD05683140	68KΩ
R716	1	1	1	GD05683140	68KΩ
R717	1	1	1	NK05101010	100Ω 1W
R718	1	1	1	NK05101010	100Ω 1W
R719	1	1	1	GG05100140	10Ω
R720	1	1	1	GG05100140	10Ω
R721	1	1	1	GG05100140	10Ω
R722	1	1	1	GG05100140	10Ω
R723	1	1	1	NK05221120	220Ω ½W
R724	1	1	1	NK05221120	220Ω ½W
R725	1	1	1	BW10000040	0.27Ω x 2 3W, Compo
R726	1	1	1	BW10000040	0.27Ω x 2 3W, Compo
R727	1	1	1	NK05047010	4,7Ω 1W
R728	1	1	1	NK05047010	4.7Ω 1W
R729	1	1	1	NK05100020	10Ω 2W
R730	1	1	1	NK05100020	10Ω 2W
R801	1	1	1	RF05010120	1Ω ½W; Fusible
⚠R804	1	1	1	NK05680010	68Ω 1W
R805	1	1	1	NK05680010	68Ω 1W
R806	1	1	1	GD05222140	2.2KΩ
R807	1	1	1	GD05222140	2.2KΩ
					P700-SEMICONDUCTORS
DN31	1	1	1	HD20015030	Diode DS135D
DN32	1	1	1	HD20015030	Diode DS135D
DN33	1	1	1	HD30023010	Zener HZ6L
DN34	1	1	1	HD20001000	Diode 1S1555
D701	1	1	1	HD30023010	Zener HZ6L
⚠D801	1	1	1	HD20008290	Diode S4VB20
⚠D802	1	1	1	HD20021290	Diode SIVB20
D803	1	1	1	HD30038010	Zener HZ11CIL
D804	1	1	1	HD30038010	Zener HZ11CIL
⚠QN31	1	1	1	HT111752B0	Transistor 2SA1775(J orH)
⚠QN32	1	1	1	HT327852B0	Transistor 2SC2785(J or H)
Q701	1	1	1	HT413022B0	Transistor 2SD1302(S or T)
Q702	1	1	1	HT413022B0	Transistor 2SD1302(S or T)
Q703	1	1	1	HC10111030	IC STK30422A
Q704	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q705	1	1	1	HT309452B0	Transistor 2SC945(P or Q)
Q706	1	1	1	HT406672F0	Transistor 2SD667(C or D)
Q707	1	1	1	HT406672F0	Transistor 2SD667(C or D)
Q708	1	1	1	HT206472F0	Transistor 2SB647(C or D)
Q709	1	1	1	HT206472F0	Transistor 2SB674(C or D)
⚠Q801	1	1	1	HT403132P0	Transistor 2SD313(D or E)
⚠Q802	1	1	1	HT205072P0	Transistor 2SB507(D or E)

●(N):for Europe
●(A):for Australia
●(F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					P700-MISCELLANEOUS
J701	1	1	1	YJ07000860	Jack
J814	1	1	1	YJ07000860	Jack
J815	1	1	1	YJ07000860	Jack
J816	1	1	1	YJ07000870	Jack
J821	1	1		YJ08000270	Jack, Fuse Crip
J822	1	1		YJ08000270	Jack, Fuse Crip
J823	1	1		YJ08000270	Jack, Fuse Crip
J824	1	1		YJ08000270	Jack, Fuse Crip
L701	1	1	1	LL23905120	Coil, 1μH
L702	1	1	1	LL23905120	Coil, 1μH
W701	1	1	1	YU03140260	Jumper Lead, (3P)
W703	1	1	1	YU02240240	Jumper Lead, (2P)
W704	1	1	1	YU03240240	Jumper Lead, (3P)
W815	1	1	1	YU03080260	Jumper Lead, (3P)
W816	1	1	1	YU04060260	Jumper Lead, (4P)
					PE00-TONE CONTROL AMP CIRCUIT BOARD
PE00	1	1	1	YK240H1720	P.W. Board, Tone Control Amp.
	1	1		ZZ240H1720	P.W. Board Assembly
					PE00-CAPACITROS
CE01	1	1	1	EJ33505010	Elect 3.3μF 50V
CE02	1	1	1	EJ33505010	Elect 3.3μF 50V
CE03	1	1	1	DD15470370	Ceramic 47pF ±5%
CE04	1	1	1	DD15470370	Ceramic 47pF ±5%
CE05	1	1	1	EA10701030	Elect 100μF 10V
CE06	1	1	1	EA10701030	Elect 100μF 10V
CE07	1	1	1	EJ22505010	Elect 2.2μF 50V
CE08	1	1	1	EJ22505010	Elect 2.2μF 50V
CE09	1	1	1	EA10405030	Elect 0.1μF 50V
CE10	1	1	1	EA10405030	Elect 0.1μF 50V
CE11	1	1	1	EA10701030	Elect 100μF 10V
CE12	1	1	1	EA10701030	Elect 100μF 10V
CE13	1	1	1	EJ10505010	Elect 1μF 50V
CE14	1	1	1	EJ10505010	Elect 1μF 50V
CE15	1	1	1	EJ47502510	Elect 4.7μF 25V
CE16	1	1	1	EJ47502510	Elect 4.7μF 25V
CE17	1	1	1	DF15473300	Film 0.047μF ±5%
CE18	1	1	1	DF15473300	Film 0.047μF ±5%
CE19	1	1	1	DD15330370	Ceramic 33pF ±5%
CE20	1	1	1	DD15330370	Ceramic 33pF ±5%
CE21	1	1	1	EA33505030	Elect 3.3μF 50V
CE22	1	1	1	EA33505030	Elect 3.3μF 50V
CE23	1	1	1	EA22700630	Elect 220μF 6.3V
CE24	1	1	1	EA22700630	Elect 220μF 6.3V
CE25	1	1	1	EA33505030	Elect 3.3μF 50V
CE26	1	1	1	EA33505030	Elect 3.3μF 50V
CE27	1	1	1	EJ10405010	Elect 0.1μF 50V
CE28	1	1	1	EJ10405010	Elect 0.1μF 50V
CE29	1	1	1	EA22700630	Elect 220μF 6.3V
CE30	1	1	1	EA22700630	Elect 220μF 6.3V
CE33	1	1	1	DD15330370	Ceramic 33pF ±5%
CE34	1	1	1	DD15330370	Ceramic 33pF ±5%
CF01	1	1	1	EA33505030	Elect 3.3μF 50V
CF02	1	1	1	EA33601630	Elect 33μF 16V
CF03	1	1	1	DD15331370	Ceramic 330pF ±5%
CF04	1	1	1	EA33505030	Elect 3.3μF 50V
CF05	1	1	1	EA33505030	Elect 3.3μF 50V
CF06	1	1	1	EA33505030	Elect 3.3μF 50V

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					PE00-RESISTORS (All Resistors are ±5% & ¼W)
RE01	1	1	1	GD05223140	22KΩ
RE02	1	1	1	GD05223140	22KΩ
RE03	1	1	1	GD05221140	220Ω
RE04	1	1	1	GD05221140	220Ω
RE05	1	1	1	GD05392140	3.9KΩ
RE06	1	1	1	GD05392140	3.9KΩ
RE07	1	1	1	GD05473140	47KΩ
RE08	1	1	1	GD05473140	47KΩ
RE09	1	1	1	GD05102140	1KΩ
RE10	1	1	1	GD05102140	1KΩ
RE11	1	1	1	GD05102140	1KΩ
RE12	1	1	1	GD05102140	1KΩ
RE13	1	1	1	GD05473140	47KΩ
RE14	1	1	1	GD05473140	47KΩ
RE15	1	1	1	GD05472140	4.7KΩ
RE16	1	1	1	GD05472140	4.7KΩ
RE17	1	1	1	GD05101140	100Ω
RE18	1	1	1	GD05101140	100Ω
RE19	1	1	1	GD05473140	47KΩ
RE20	1	1	1	GD05473140	47KΩ
RE21	1	1	1	GD05104140	100KΩ
RE22	1	1	1	GD05104140	100KΩ
RE23	1	1	1	GD05152140	1.5KΩ
RE24	1	1	1	GD05152140	1.5KΩ
RE25	1	1	1	GD05102140	1KΩ
RE26	1	1	1	GD05102140	1KΩ
RE27	1	1	1	GD05473140	47KΩ
RE28	1	1	1	GD05473140	47KΩ
RE29	1	1	1	GD05472140	4.7KΩ
RE30	1	1	1	GD05472140	4.7KΩ
RE31	1	1	1	GD05101140	100Ω
RE32	1	1	1	GD05101140	100Ω
RE33	1	1	1	GD05683140	68KΩ
RE34	1	1	1	GD05683140	68KΩ
RE35	1	1	1	GD05224140	220KΩ
RE36	1	1	1	GD05224140	220KΩ
RE37	1	1	1	GD05222140	2.2KΩ
RE38	1	1	1	GD05222140	2.2KΩ
RE39	1	1	1	GD05221140	220Ω
RE40	1	1	1	GD05221140	220Ω
RE41	1	1	1	GD05221140	220Ω
RE42	1	1	1	GD05221140	220Ω
RE43	1	1	1	GD05222140	2.2KΩ
RE44	1	1	1	GD05222140	2.2KΩ
RE45	1	1	1	GD05103140	10KΩ
RE46	1	1	1	GD05103140	10KΩ
RE47	1	1	1	GD05101140	100Ω
RE48	1	1	1	GD05101140	100Ω
RF01	1	1	1	GD05223140	22KΩ
RE02	1	1	1	GD05223140	22KΩ
RF03	1	1	1	GD05102140	1KΩ
RF04	1	1	1	GD05331140	330Ω
RF05	1	1	1	GD05393140	39KΩ
RF06	1	1	1	GD05222140	2.2KΩ
RF07	1	1	1	GD05222140	2.2KΩ

- (N):for Europe
- (A):for Australia
- (F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					PE00-SEMICONDUCTORS
QE01	1	1	1	HC10008090	IC NJM4558D-D
QE02	1	1	1	HC10003090	IC NJM4558D
QE03	1	1	1	HT333122A0	Transistor 2SC3312(R or S)
QE04	1	1	1	HT333122A0	Transistor 2SC3312(R or S)
QE05	1	1	1	HT333122A0	Transistor 2SC3312(R or S)
QE06	1	1	1	HT333122A0	Transistor 2SC3312(R or S)
QE07	1	1	1	HC406603C0	IC LC4066B-H
QE08	1	1	1	HC406603C0	IC LC4066B-H
QF01	1	1	1	HC10008090	IC NJM4558D-D
					PE00-MISCELLANEOUS
JE02	1	1	1	YJ07000320	Jack, (7P)
JE03	1	1	1	YJ07000870	Jack, (4P)
JF01	1	1	1	YJ07000850	Jack, (2P)
JF02	1	1	1	YJ07000880	Jack, (5P)
					PF50-MIC JACK CIRCUIT BOARD
PF50	1	1	1	YK240H1770	P.W. Board, Mic Jack
	1	1		ZZ240H1770	P.W. Board Assembly
CF07	1	1	1	DK18103300	Ceramic Cap. 0.01μF
JF51	1	1	1	YJ01001780	Jack, Mic
WF01	1	1	1	YU02080260	Jumper Lead, (2P)
					PG00-ELECTRIC VOLUME CIRCUIT BOARD
PG00	1	1	1	YK240H1730	P.W. Board, Electric Volume
	1	1		ZZ240H1730	P.W. Board Assembly
					PG00-CAPACITORS
CG01	1	1	1	EA22505030	Elect 2.2μF 50V
CG02	1	1	1	EA22505030	Elect 2.2μF 50V
CG03	1	1	1	EJ22505010	Elect 2.2μF 50V
CG04	1	1	1	EJ22505010	Elect 2.2μF 50V
CG05	1	1	1	EJ22601610	Elect 22μF 16V
CG06	1	1	1	EJ22601610	Elect 22μF 16V
CG07	1	1	1	EJ22601610	Elect 22μF 16V
CG08	1	1	1	EJ22601610	Elect 22μF 16V
CG09	1	1	1	EA22601630	Elect 22μF 16V
CG10	1	1	1	EA22601630	Elect 22μF 16V
CG11	1	1	1	EA10601630	Elect 10μF 16V
CG13	1	1	1	EA47405030	Elect 0.47μF 50V
					PG00-RESISTORS (All Resistors are ±5% & ¼W)
RG01	1	1	1	GD05123140	12KΩ
RG02	1	1	1	GD05123140	12KΩ
RG03	1	1	1	GD05473140	47KΩ
RG04	1	1	1	GD05473140	47KΩ
RG05	1	1	1	GD05154140	150KΩ
RG06	1	1	1	GD05154140	150KΩ
RG07	1	1	1	GD05102140	1KΩ
RG08	1	1	1	GD05102140	1KΩ
RG09	1	1	1	GD05274140	270KΩ
RG10	1	1	1	GD05223140	22KΩ

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
RG11	1	1	1	GD05223140	22KΩ
RG12	1	1	1	GD05103140	10KΩ
RG13	1	1	1	GD05103140	10KΩ
RG14	1	1	1	RA05020180	5KΩ(B), Trimming
RG15	1	1	1	GD05102140	1KΩ
RG16	1	1	1	GD05102140	1KΩ
RG17	1	1	1	GD05684140	680KΩ
					PG00-SEMICONDUCTORS
DG01	1	1	1	HD30023010	Zener HZ6CIL
DG02	1	1	1	HD30023010	Zener HZ6CIL
DG04	1	1	1	HD20001000	Diode 1S1555
DG05	1	1	1	HD20001000	Diode 1S1555
DG06	1	1	1	HD30023010	Zener HZ6CIL
DG07	1	1	1	HD30023010	Zener HZ6CIL
QG01	1	1	1	HC10085050	IC TC9153P
QG02	1	1	1	HC10008090	IC NJM4558D-D
QG04	1	1	1	HT327852C0	Transistor 2SC2785(FH,FF)
QG05	1	1	1	HT327852C0	Transistor 2SC2785(HF,FF)
QG06	1	1	1	HC10031060	IC MPC78L05
					PG00-MISCELLANEOUS
JG02	1	1	1	YJ07000860	Jack, (3P)
JG03	1	1	1	YJ07000330	Jack, (8P)
JG06	1	1	1	YJ07000860	Jack, (3P)
WG02	1	1	1	YU03080260	Jumper Lead, (3P)
WG04	1	1	1	YU03120260	Jumper Lead, (3P)
					PG50-TONE, MAIN VOLUME LED CIRCUIT BOARD
PG50	1	1	1	WB240H2430	P.W.Board, Tone; Main Volume
	1	1		ZZ240H2430	P.W. Board Assembly
					PG50-CAPACITORS
CE51	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CE52	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CE53	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CE54	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CE56	1	1	1	EA10801670	Elect 1000μF 16V
CE58	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CE59	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CE60	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CE61	1	1	1	DF15473350	Film 0.047μF ±10%
CE62	1	1	1	DF15473350	Film 0.047μF ±10%
CE63					
CE63	1	1	1	DK4633230Y	Ceramic 3300pF ±10%, Chip
CE64	1	1	1	DK4633230Y	Ceramic 3300pF ±10%, Chip
CE67	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CE68	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CE69	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
					PG50-RESISTORS (All Resistors are ±5% & 1/8W)
RE51	1	1	1	RI0510418Y	100KΩ, Chip
RE52	1	1	1	RI0510418Y	100KΩ, Chip
RE53	1	1	1	RI0510418Y	100KΩ, Chip
RE54	1	1	1	RI0510418Y	100KΩ, Chip
RE56	1	1	1	RI0510318Y	10KΩ, Chip
RE57	1	1	1	RI0510318Y	10KΩ, Chip
RE58	1	1	1	RI0510318Y	10KΩ, Chip
RE62	1	1	1	RI0500018Y	0Ω, Chip
RE63	1	1	1	GD05472140	4.7KΩ ¼W
RE64	1	1	1	GD05472140	4.7KΩ ¼W

●(N):for Europe
●(A):for Australia
●(F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
RE65	1	1	1	GD05472140	4.7KΩ ¼W
RE66	1	1	1	RI0522218Y	2.2KΩ, Chip
RE67	1	1	1	RI0527218Y	2.7KΩ, Chip
RE68	1	1	1	RI0527218Y	2.7KΩ, Chip
RE69	1	1	1	RI0522318Y	22KΩ, Chip
RE70	1	1	1	RI0522318Y	22KΩ, Chip
RE71	1	1	1	RI0533318Y	33KΩ, Chip
RE72	1	1	1	RI0533318Y	33KΩ, Chip
RE73	1	1	1	RI0568218Y	6.8KΩ, Chip
RE74	1	1	1	RI0568218Y	6.8KΩ, Chip
RE75	1	1	1	RI0515318Y	15KΩ, Chip
RE76	1	1	1	RI0515318Y	15KΩ, Chip
RE77	1	1	1	RI0547218Y	4.7KΩ, Chip
RE78	1	1	1	RI0547218Y	4.7KΩ, Chip
RE79	1	1	1	RI0518218Y	1.8KΩ
RE80	1	1	1	RI0518218Y	1.8KΩ
RE81	1	1	1	RS01040210	100KΩ(C) x 2, Variable
RE82	1	1	1	RS01040210	100KΩ(C) x 2, Variable
RE83	1	1	1	RS01040200	100KΩ(B) x 2, Variable
RE85	1	1	1	RI0500018Y	0Ω, Chip
RE86	1	1	1	RI0500018Y	0Ω, Chip
					Ω
RG51	1	1	1	RI0515218Y	1.5KΩ, Chip
RG52	1	1	1	RI0515218Y	1.5KΩ, Chip
RG53	1	1	1	RI0515218Y	1.5KΩ, Chip
RG54	1	1	1	RI0515218Y	1.5KΩ, Chip
RG55	1	1	1	RI0515218Y	1.5KΩ, Chip
RG56	1	1	1	RX02040030	200KΩ(W), Variable
					PG50-SEMICONDUCTORS
DE52	1	1	1	HD20001000	Diode 1S1555
DE53	1	1	1	HI10047020	L.E.D. LN222RPH
DE55	1	1	1	HI10047020	L.E.D. LN222RPH
DE56	1	1	1	HI10047020	L.E.D. LN222RPH
DG52	1	1	1	HI10048020	L.E.D. LN322GPH
DG53	1	1	1	HI10048020	L.E.D. LN322GPH
DG54	1	1	1	HI10048020	L.E.D. LN322GPH
DG55	1	1	1	HI10048020	L.E.D. LN322GPH
DG56	1	1	1	HI10048020	L.E.D. LN322GPH
QE51	1	1	1	HC10084050	IC TC9130P
QE54	1	1	1	HX207092BZ	Transistor 2SB709A(R or S)
QE55	1	1	1	HX207092BZ	Transistor 2SB709A(R or S)
QE56	1	1	1	HX207092BZ	Transistor 2SB709A(R or S)
QE57	1	1	1	HX406012BZ	Transistor 2SD601A(R or S)
QG51	1	1	1	HC10008370	IC TL489C
					PG50-MISCELLANEOUS
SE51	1	1	1	SP01010570	Push Switch
SE52	1	1	1	SP01010570	Push Switch
SE53	1	1	1	SP01010570	Push Switch
SG51	1	1	1	SP01010570	Push Switch
SG52	1	1	1	SP01010570	Push Switch
WE02	1	1	1	YU07100260	Jumper Lead, (7P)
WE03	1	1	1	YU04100260	Jumper Lead, (4P)
WE51	1	1	1	YU02120260	Jumper Lead, (2P)
WF02	1	1	1	YU05100260	Jumper Lead, (5P)
WG03	1	1	1	YU08100260	Jumper Lead, (8P)
WG06	1	1	1	YU03100260	Jumper Lead, (3P)

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					PO00-POWER SWITCH CIRCUIT BOARD
PO00	1	1	1	WB240H2440	P.W. Board, Power Switch
	1	1		ZZ240H8440	P.W. Board Assembly
⚠G001	1	1		DK18103840	Ceramic Cap. 0.01μF 250V
⚠S001	1	1		SP01010650	Push Switch, Power
					PS00-FUNCTION/MICON CIRCUIT BOARD
PS00	1	1	1	WB240H2410	P.W. Board, Function/Micon
	1	1		ZZ240H2410	P.W. Board Assembly
					PS00-CAPACITORS
CS01	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%
CS02	1	1	1	EJ10405010	Elect 0.1μF 50V
CS03	1	1	1	EJ10505010	Elect 1μF 50V
CS04	1	1	1	EJ10405010	Elect 0.1μF 50V
CU01	1	1	1	EJ10505010	Elect 1μF 50V
CU02	1	1	1	DD4522130Y	Ceramic 220pF ±5%
CU03	1	1	1	DD4522130Y	Ceramic 220pF ±5%
CU04	1	1	1	EJ47502510	Elect 4.7μF 25V
CU05	1	1	1	EJ33502510	Elect 3.3μF 25V
CU06	1	1	1	EJ10601610	Elect 10μF 16V
C401	1	1	1	EJ33505010	Elect 3.3μF 50V
C402	1	1	1	EJ33505010	Elect 3.3μF 50V
C403	1	1	1	DD4510130Y	Ceramic 100pF ±5%
C404	1	1	1	DD4510130Y	Ceramic 100pF ±5%
C405	1	1	1	DK4633230Y	Ceramic 3300pF ±10%
C406	1	1	1	DK4633230Y	Ceramic 3300pF ±10%
C407	1	1	1	DK4612330Y	Ceramic 0.012μF ±10%
C408	1	1	1	DK4612330Y	Ceramic 0.012μF ±10%
C409	1	1	1	EJ10602510	Elect 10μF 25V
C410	1	1	1	EJ10602510	Elect 10μF 25V
C411	1	1	1	EJ10700610	Elect 100μF 6.3V
C412	1	1	1	EJ10700610	Elect 100μF 6.3V
C413	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%
C414	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%
					PS00-RESISTORS (All Resistors are ±5% & 1/8W)
RS01	1	1	1	RI0510418Y	100KΩ, Chip
RS02	1	1	1	RI0522418Y	220KΩ, Chip
RS03	1	1	1	FI0539218Y	3.9KΩ, Chip
RS04	1	1	1	RI0522218Y	2.2KΩ, Chip
RS05	1	1	1	RI0510318Y	10KΩ, Chip
RS07	1	1	1	RI0500018Y	0Ω, Chip
RS08	1	1	1	RI0500018Y	0Ω, Chip
RS09	1	1	1	RI0500018Y	0Ω, Chip
RS10	1	1	1	RI0500018Y	0Ω, Chip
RS11	1	1	1	RI0500018Y	0Ω, Chip
RS12	1	1	1	RI0500018Y	0Ω, Chip
RS13	1	1	1	RI0500018Y	0Ω, Chip
RS14	1	1	1	RI0500018Y	0Ω, Chip
RS15	1	1	1	RI0500018Y	0Ω, Chip

- (N):for Europe
- (A):for Australia
- (F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
RU01	1	1	1	RI0510318Y	10KΩ, Chip
RU02	1	1	1	RI0547318Y	47KΩ, Chip
RU03	1	1	1	RI0510418Y	100KΩ, Chip
RU04	1	1	1	RI0547318Y	47KΩ, Chip
RU06	1	1	1	RI0510318Y	10KΩ, Chip
RU07	1	1	1	RI0510318Y	10KΩ, Chip
RU08	1	1	1	RI0522318Y	22KΩ, Chip
RU09	1	1	1	RI0522318Y	22KΩ, Chip
RU10	1	1	1	RI0522318Y	22KΩ, Chip
RU11	1	1	1	RI0522318Y	22KΩ, Chip
RU12	1	1	1	RI0510318Y	10KΩ, Chip
RU13	1	1	1	RI0522318Y	22KΩ, Chip
RU14	1	1	1	RI0522318Y	22KΩ, Chip
RU15	1	1	1	RI0510318Y	10KΩ, Chip
RU16	1	1	1	RI0510318Y	10KΩ, Chip
RU17	1	1	1	RI0510518Y	1MΩ, Chip
RU18	1	1	1	RI0547318Y	47KΩ, Chip
RU19	1	1	1	RI0510318Y	10KΩ, Chip
RU20	1	1	1	RI0500018Y	0Ω, Chip
RU21	1	1	1	RI0510218Y	1KΩ, Chip
RU22	1	1	1	RI0510218Y	1KΩ, Chip
RU23	1	1	1	RI0500018Y	0Ω, Chip
R401	1	1	1	RI0515418Y	150KΩ, Chip
R402	1	1	1	RI0515418Y	150KΩ, Chip
R403	1	1	1	RI0568318Y	68KΩ, Chip
R404	1	1	1	RI0568318Y	68KΩ, Chip
R405	1	1	1	RI0522218Y	2.2KΩ, Chip
R406	1	1	1	RI0522218Y	2.2KΩ, Chip
R407	1	1	1	RI0556118Y	560Ω, Chip
R408	1	1	1	RI0556118Y	560Ω, Chip
R409	1	1	1	RI0522318Y	22KΩ, Chip
R410	1	1	1	RI0522318Y	22KΩ, Chip
R411	1	1	1	RI0527418Y	270KΩ, Chip
R412	1	1	1	RI0527418Y	270KΩ, Chip
R413	1	1	1	RI0510318Y	10KΩ, Chip
R414	1	1	1	RI0510318Y	10KΩ, Chip
R415	1	1	1	GD05100140	10Ω
R416	1	1	1	GD05100140	10Ω
R417	1	1	1	GD05100140	10Ω
R418	1	1	1	GD05100140	10Ω
R419	1	1	1	RI00500018Y	0Ω, Chip
					PS00-SEMICONDUCTORS
DS01	1	1	1	HD20001000	Diode 1S1555
DS02	1	1	1	HD20001000	Diode 1S1555
DU01	1	1	1	HD20001000	Diode 1S1555
DU02	1	1	1	HD20001000	Diode 1S1555
DU03	1	1	1	HD20001000	Diode 1S1555
DU04	1	1	1	HD20001000	Diode 1S1555
DU05	1	1	1	HD20001000	Diode 1S1555
DU06	1	1	1	HD30076090	Zener WZ-038
DU07	1	1	1	HD20001000	Diode 1S1555
QS01	1	1	1	HC10110030	IC LC7815-H
QS02	1	1	1	HC406603C0	IC LC4066BH
QS03	1	1	1	HC406603C0	IC LC4066BH
QU01	1	1	1	HX406012BZ	Transistor 2SC601A(RorS),Chip
QU02	1	1	1	HX406012BZ	Transistor 2SC601A(RorS),Chip
QU03	1	1	1	HC10102030	IC LM6416E
QU04	1	1	1	HX406012BZ	Transisor 2SD601A(RorS),Chip
QU05	1	1	1	FQ04003010	Seramic VIB. CSB-400P
Q401	1	1	1	HC10008090	IC NUM4558D-D

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					PS00-MISCELLANEOUS
JU01	1	1	1	YJ06002690	Juck, (12P)
J401	1	1	1	YJ07000990	Juck, (3P)
WS01	1	1	1	YU07070260	Jumper Lead, (7P)
WS02	1	1	1	YU07070260	Jumper Lead, (7P)
WS03	1	1	1	YU07070260	Jumper Lead, (7P)
WU01	1	1	1	YU04070260	Jumper Lead, (4P)
W401	1	1	1	YU03060260	Jumper Lead, (3P)
W814	1	1	1	YU03100260	Jumper Lead, (3P)
					PV00-RCA PIN JACK CIRCUIT BOARD
PV00	1	1	1	WB240H2420	P.W. Board, RCA Pin Jack
	1	1		ZZ240H2420	P.W. Board Assembly
					PV00-CAPACITORS
CV01	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CV02	1	1	1	DK4610330Y	Ceramic 0.01μF ±10%, Chip
CV03	1	1	1	DD4527130Y	Ceramic 27pF ±5%, Chip
CV04	1	1	1	DD4527130Y	Ceramic 270pF ±5%, Chip
					PV00-RESISTORS (All Resistors are ±5% & 1/8W)
RV01	1	1	1	RI0510218Y	1KΩ
RV02	1	1	1	RI0510218Y	1KΩ
RV03	1	1	1	RI0510218Y	1KΩ
RV04	1	1	1	RI0510218Y	1KΩ
RV05	1	1	1	RI0510218Y	1KΩ
RV06	1	1	1	RI0510218Y	1KΩ
RV07	1	1	1	RI0510218Y	1KΩ
RV08	1	1	1	RI0510218Y	1KΩ
RV09	1	1	1	RI0510118Y	100Ω
RV10	1	1	1	RI0510118Y	100Ω
RV11	1	1	1	RI0522118Y	220Ω
RV12	1	1	1	RI0522118Y	220Ω
RV13	1	1	1	RI0510518Y	1MΩ
RV14	1	1	1	RI0510518Y	1MΩ
RV15	1	1	1	RI0510518Y	1MΩ
RV16	1	1	1	RI0510518Y	1MΩ
RV17	1	1	1	RI0510518Y	1MΩ
RV18	1	1	1	RI0510518Y	1MΩ
RV19	1	1	1	RI0510518Y	1MΩ
RV20	1	1	1	RI0510518Y	1MΩ
					PV00-MISCELLANEOUS
JV01	1	1	1	YT02040290	Terminal, (4P) RCA Pin
JV02	1	1	1	YT02060200	Terminal, (6P) RCA Pin
JV03	1	1	1	YT02040490	Terminal, (4P) RCA Pin
JV04	1	1	1	YT02020350	Terminal, (2P) RCA Pin
JV05	1	1	1	YT02020340	Terminal, (2P) RCA Pin
					PW00-SPEAKER TERMINAL CIRCUIT BOARD
PW00	1	1	1	YK240H1750	P.W. Board, Speaker Terminal
	1	1		ZZ230H1750	P.W. Board Assembly
PW00	1	1	1	YT03040220	Terminal, Speaker

●(N):for Europe
●(A):for Australia
●(F):for Japan

REF. DESIG.	Q'TY N	A	F	PART NO.	DESCRIPTION
					PW50-HEADPHONE CIRCUIT BOARD
PW50	1	1	1	YK240H1760	P.W. Board, Headphone
	1	1		ZZ240H1760	P.W. Borad Assembly
RW51	1	1	1	NK05331010	Resistor 330Ω ±5% 1W
RW52	1	1	1	NK05331010	Resistor 330Ω ±5% 1W
JW51	1	1	1	YJ01001770	Jack, Headphone
WW52	1	1	1	YU02340240	Jumper Lead, (2P)
					PY00-FUNCTION SWITCH CIRCUIT BOARD
PY00	1	1	1	YK240H1740	P.W. Board, Function Switch
	1	1		ZZ240H1740	P.W. Board Assembly
					PY00-RESISTORS
RY01	1	1	1	GD05222140	2.2KΩ ±5% ¼W
RY02	1	1	1	GD05222140	2.2KΩ ±5% ¼W
RY03	1	1	1	GD05104140	100KΩ ±5% ¼W
					PY00-SEMICONDUCTORS
DY01	1	1	1	HI10043020	L.E.D. LN210RP
DY02	1	1	1	HI10043020	L.E.D. LN210RP
DY03	1	1	1	HI10043020	L.E.D. LN210RP
DY04	1	1	1	HI10043020	L.E.D. LN210RP
DY05	1	1	1	HI10043020	L.E.D. LN210RP
					PY00-MISCELLANEOUS
JY01	1	1	1	YJ07000920	Jack, (5P)
JY02	1	1	1	YJ07000930	Jack, (6P)
SY01	1	1	1	SP01010570	Push Switch
SY02	1	1	1	SP01010570	Push Switch
SY03	1	1	1	SP01010570	Push Switch
SY04	1	1	1	SP01010570	Push Switch
SY05	1	1	1	SP01010570	Push Switch

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

NOTE ON SAFETY:
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

18. TECHNICAL SPECIFICATIONS

AUDIO SECTION

POWER OUTPUT PER CHANNEL
- DIN 4 OHMS 1 kHz 39W
- RMS 4 OHMS 1 kHz 37W
- DIN 8 OHMS 1 kHz 32W
- RMS 8 OHMS 1 kHz 30W

TOTAL HARMONIC DISTORTION AT RMS 8 OHMS 0.05%
I.M. DISTORTION 0.05%
DAMPING FACTOR 8 OHMS (1 kHz) 55

MM CARTRIDGE INPUT

Frequency Response (RIAA) ..... ±0.5 dB
Signal-to-Noise Ratio ..... 81 dB
Input Impedance ..... 47k ohms
Input Capacitance ..... 270 pF
Input Sensitivity ..... 2.8 mV
Equivalent Input Noise ..... 3.0 μV
Dynamic Range ..... 92 dB

MIC. INPUT

Input Impedance ..... 12k ohms
Input Sensitivity ..... 2.5 mV

AUX. INPUT

Input Impedance ..... 28k ohms
Input Sensitivity ..... 150 mV
Frequency Response ..... 5 Hz ~ 50 kHz
Signal-to-Noise Ratio ..... 86 dB

OUTPUT VOLTAGE

Tape Out ..... 400 mV

OUTPUT IMPEDANCE

Tape Out ..... 380 ohms

GENERAL

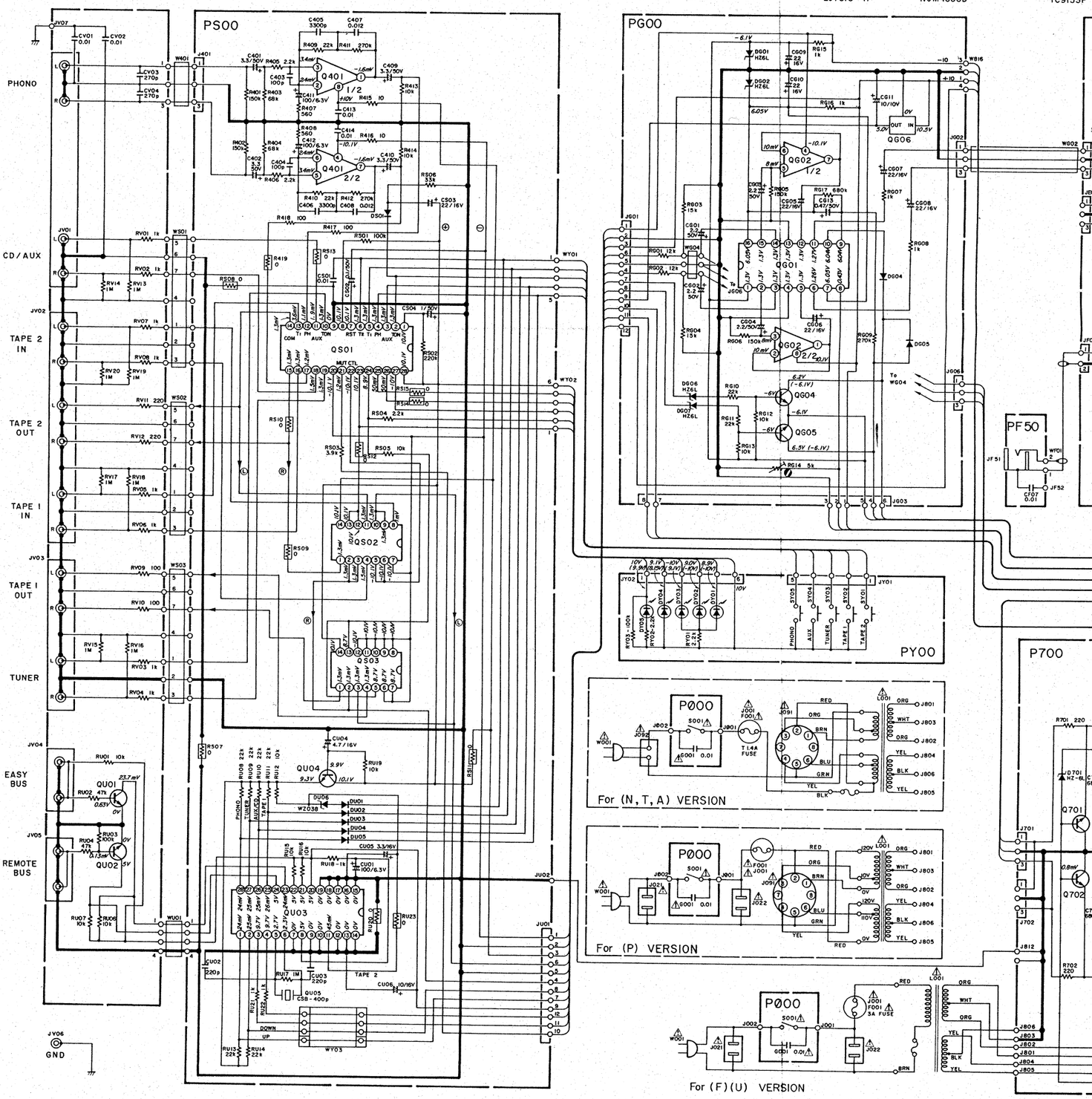
Power Requirement ..... 110/120/220/240V AC, 50/60 Hz
Power Consumption at Rated Output, both Channels Driven 125W
Dimensions
- Panel Width ..... 320 mm
- Panel Height ..... 55 mm
- Depth ..... 260 mm

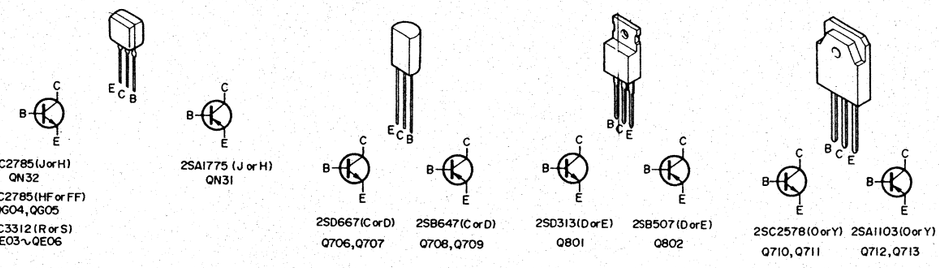
Weight
- Unit Alone ..... 4.5 kg

Specifications and appearance are subject to change for modification without notice.

19. SCHEMATIC DIAGRAM

QU05 FQ04003010 CSB - 400P	QN31 HTIII752BI 2SAI775 (J or H)	QN32 HT327852BI 2SC2785 (J or H)							
QE57 QU01 , QU02 , QU04 HX406012BZ 2SD601A (R or S)	QE51 HC10084050 TC9130P	Q704,Q705 HT309452B0 2SC945 (P or Q)	Q703 HC10111030 STK30422A	Q706 , Q707 HT406672F0 2SD667 (C or D)	Q710 , Q711 HT325782B0 2SC2578 (O or Y)	QF01 , Q401 , QE01 , QG02 HC10008090 NJM4558D - D	Q802 HT205072P0 2SB507 (D or E)	QS02 , QS03 , QE07, QE08 HC406603C0 LC4066BH	QE03 ~ Q HT333122 2SC3312 (
QU03 HC10102030 LM6416E	QE54 ~ QE56 HX207092BZ 2SB709A (R or S)	Q701 , Q702 HT413022B0 2SDI302 (S or T)	QG04 , QG05 HT327852C0 2SC2785 (HF, FF)	Q708 , Q709 HT206472F0 2SB647 (C or D)	Q712 , Q713 HTIII032B0 2SAII03 (O or Y)	Q801 HT403132P0 2SD313 (D or E)	QS01 HC10110030 LC7815 - H	QE02 HC10003090 NJM4558D	Q601 HC10085 TC9153P





Components and wiring are subject to change for modification without notice.

Model PM333

2

Q802
HT205072P0
2SB507 (D or E)

QS01
HC10110030
LC7815-H

QS02, QS03, QE07, QE08
HC406603C0
LC4066BH

QE02
HC10003090
NJM4558D

QE03 ~ QE06
HT333122A0
2SC3312 (R or S)

QG01
HC10085050
TC9153P

DU01 ~ DU05, DS01, DE52, DG04, DG05
HD20001001
1S1555

QG06
HC10031060
MPC78L05

QG51
HC10008370
TL489C

QU06
HD30076090
WZ038

DE53, DE55, DE56
HI10047020
LN222RPH

DN31, DN32
HD20015030
DS135D

DG06, DG07, DN33
D701, DG01, DG02
HD30023011
HZ6C1L

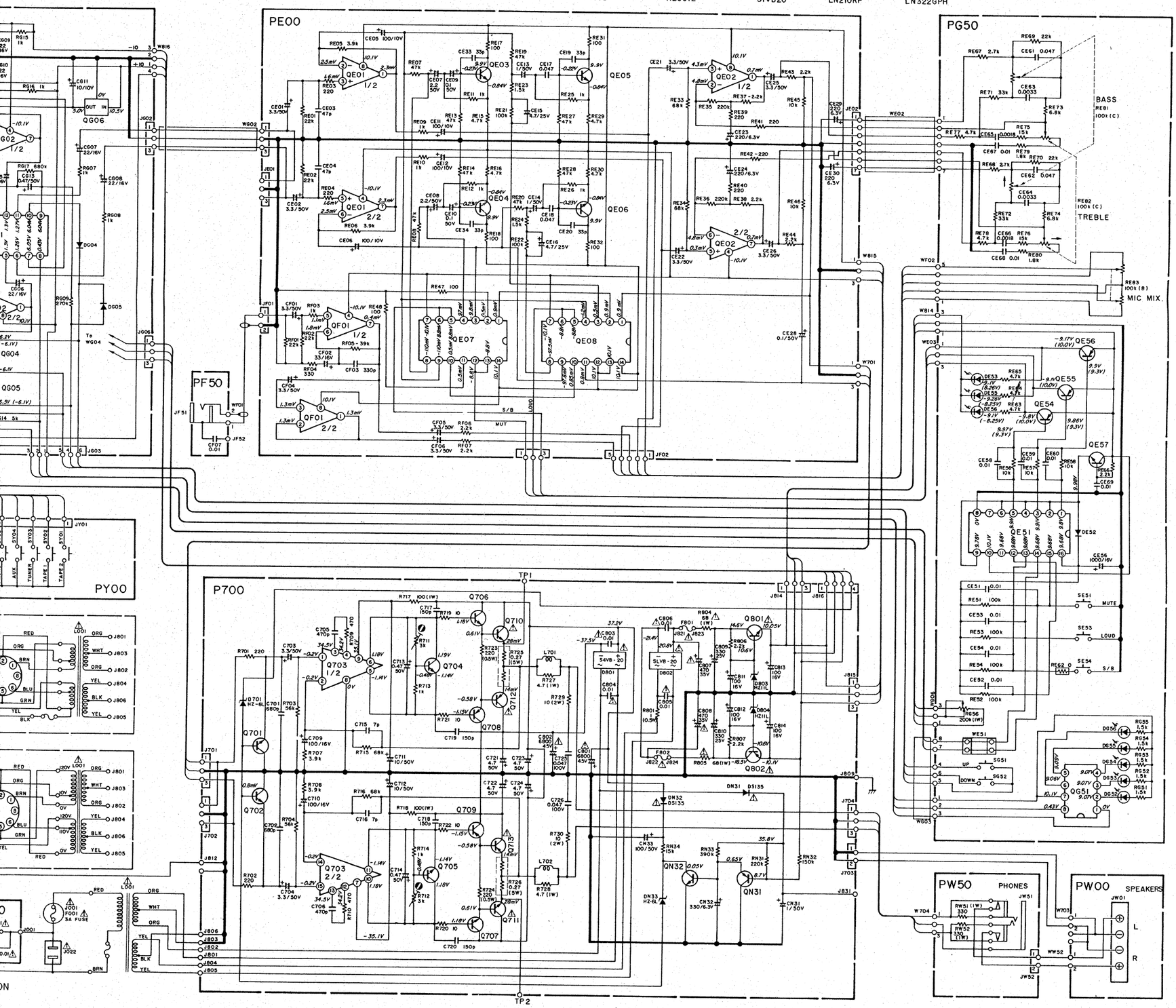
D801
HD20008290
S4VB20

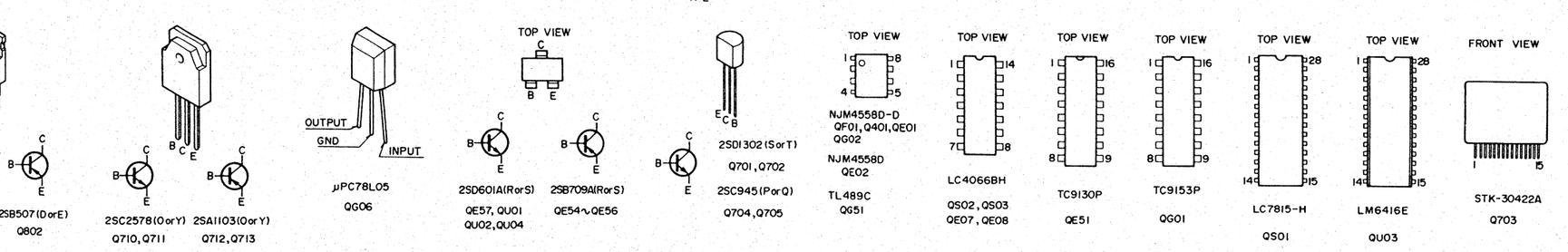
D802
HD20021290
S1VB20

D803, D804
HD30038010
HZ11C1L

DY01 ~ DY05
HI10043020
LN210RP

DG52 ~ DG56
HI10048020
LN3226PH





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